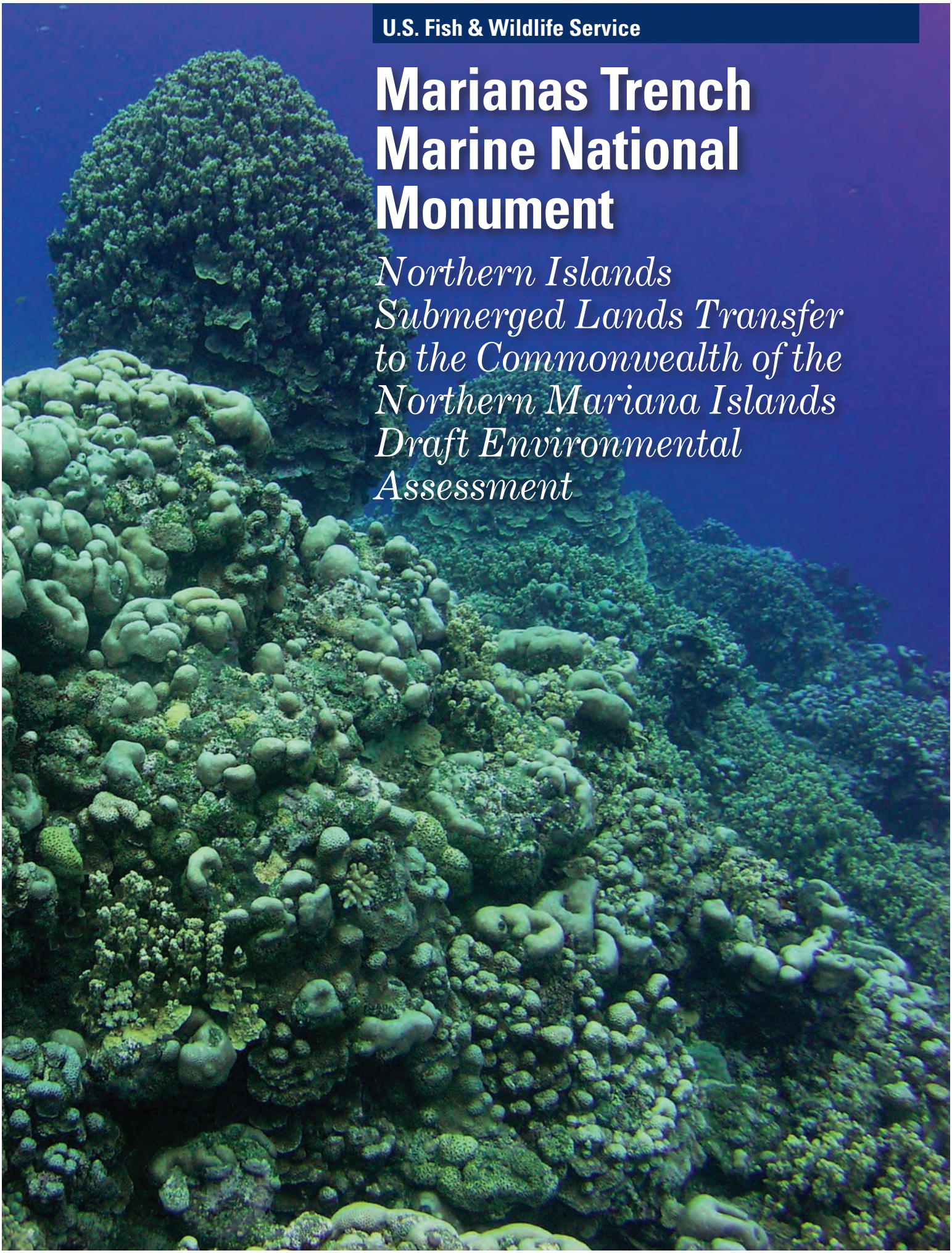

U.S. Fish & Wildlife Service

Marianas Trench Marine National Monument

Northern Islands Submerged Lands Transfer to the Commonwealth of the Northern Mariana Islands Draft Environmental Assessment

Marianas Trench Marine National Monument

Northern Islands Submerged Lands Transfer to the Commonwealth of the Northern Mariana Islands Draft Environmental Assessment

May 2016

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ACRONYMS/ABBREVIATIONS

Acronym	Full Phrase
ASTM	American Society for Testing and Materials
BECQ	Bureau of Environmental and Coastal Quality
BMP	Best Management Practice
BMUS	Bottomfish Management Unit Species
C	Centigrade
CMUS	Crustacean Management Unit Species
CZMA	Coastal Zone Management Act
CRE-MUS	Coral Reef Ecosystem Management Unit Species
CFR	Code of Federal Regulations
Cm	Centimeter
CNMI	Commonwealth of the Northern Mariana Islands
COTS	Crown-of-Thorns Starfish
CRED	Coral Reef Ecosystem Division
CSLMP	CNMI Submerged Lands Management Plan
DFW	Division of Fish and Wildlife
DLNR	Department of Land and Natural Resources
DoD	Department of the Defense
DOC	Department of Commerce
DOI	Department of the Interior
DPS	Distinct population segment
E	East
EA	Environmental Assessment
EBS	Environmental Baseline Study
ECOP	Environmental Condition of Property
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
ESA	Endangered Species Act of 1969, as amended
FEP	Fishery Ecosystem Plan
FONSI	Finding of No Significant Impact
Km	Kilometer
LE	Law Enforcement
M	Meter
MARAMP	Mariana Archipelago Reef Assessment and Monitoring Program
MISTCS	Mariana Islands Sea Turtle and Cetacean Survey
MMP	Monument Management Plan
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MTMNM or Monument	Marianas Trench Marine National Monument
MUS	Management Unit Species
N	North
NEPA	National Environmental Policy Act of 1969, as amended

NHPA	National Historic Preservation Act of 1966, as amended
NISL	Northern Islands Submerged Lands
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWR	National Wildlife Refuge
NWRS	National Wildlife Refuge System
NWRSAA	National Wildlife Refuge System Administration Act
OLE	Office of Law Enforcement
PIFSC	Pacific Island Fisheries Science Center
PDF	Portable Document Format
PP	Presidential Proclamation
REA	Rapid Ecological Assessment
S	South
SO	Secretary's Order
TOAD	Towed Optical Assessment Device
TSLA	Territorial Submerged Lands Act
TTPI	Trust Territory of the Pacific Islands
UN	United Nations
US	United States
USC	United States Code
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
WPRFMC	Western Pacific Regional Fishery Management Council

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APPENDICES

CHAPTER 1. PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

The Commonwealth of the Northern Mariana Islands is one of six inhabited U.S. territories, and one of two territories with "Commonwealth" status, the other is Puerto Rico. Following World War II, the Northern Mariana Islands, along with the Marshall, Palau, Yap, Kosrae, Chuuk and Pohnpei Islands, were grouped into the Trust Territory of the Pacific Islands (TTPI) by the United Nations (U.N.). Under the Trusteeship Agreement with the U.N. Security Council, the United States exercised administrative jurisdiction over the TTPI. Following an act of self-determination by its voters, the Northern Mariana Islands became a U.S. Commonwealth—the Commonwealth of the Northern Mariana Islands (CNMI)—in 1976. The CNMI is a group of 14 tropical islands located along the Mariana Trench in the North Pacific Ocean.

The Marianas Trench Marine National Monument (MTMNM or Monument) was established on January 6, 2009, by Presidential Proclamation (PP) 8335 which assigned management responsibility to the Secretary of the Department of the Interior (DOI) and the Secretary of the Department of Commerce (DOC) (Secretaries, collectively). The Secretary of DOI delegated management responsibility to the U.S. Fish and Wildlife Service (USFWS) through Secretary's Order (SO) No. 3284. The Secretary of DOC, through the National Oceanic and Atmospheric Administration (NOAA), has primary management responsibility for fishery related activities in the waters of the MTMNM.

The MTMNM (see map in Appendix A) consists of approximately 95,216 square miles (246,608 square kilometers) of submerged lands and waters of the Mariana Archipelago. It includes the following three units.

- The Islands Unit includes the submerged lands (below the mean low water line) and waters surrounding the three northernmost Mariana Islands: Farallon de Pajaros, Maug, and Asuncion. The Unit is defined by an irregular boundary containing approximately 12,387 square nautical miles[1] (nmi) (See map in Appendix A). The distances from each island to the nearest point on the Islands Unit boundary follow: Asuncion Island 20 nmi southerly; Maug Islands 31 nmi southwesterly; and Farallon de Pajaros 34 nmi southwesterly.
- The Volcanic Unit/Arc of Fire National Wildlife Refuge (NWR) includes only the submerged lands within one (1) nmi radius of 21 designated submerged volcanic sites. Three of these sites—Maug, Ahyi, and Daikoku, are also within the boundary of the Islands Unit. Therefore, for the purpose of this Draft Environmental Assessment (EA), the three sites are within the Islands Unit, and the Volcanic Unit encompasses 18 submerged volcanic sites.
- The Trench Unit/Marianas Trench NWR includes only the submerged lands extending from the northern limit of the Exclusive Economic Zone (EEZ) of the United States in the CNMI to the southern limit of the EEZ of the United States in the Territory of Guam.

[1] A nautical mile (nmi) is a unit of distance used on ocean and coastal waters that is approximately one minute of arc measured along any meridian. By international agreement, it has been set at 1,852 meters exactly or 1.15078 statute miles.

The CNMI Government maintains all authority for managing the emergent lands on the islands of Farallon de Pajaros, Maug, and Asuncion above the mean low water line. These three islands are part of a protected reserve established in 1985 by an amendment to Article XIV of the CNMI Constitution that states: "*The islands of Maug, Uracas, Asuncion, Guguan and other islands specified by law shall be maintained as uninhabited places and used only for the preservation and protection of natural resources, including but not limited to bird, wildlife and plant species*." The reserve is managed by the CNMI Division of Fish and Wildlife (DFW).

In 1974, the U.S. Congress passed the Territorial Submerged Lands Act (Public Law 93-435) (TSLA), which conveyed all right, title, and interest of the United States in submerged lands three (3) geographical miles distant from the coastlines of the U.S. island territories to the governments of Guam, the Virgin Islands, and American Samoa—the U.S. island territories in existence at that time. This law predates CNMI establishment, thus submerged lands around the Northern Mariana Islands were not addressed.

On September 18, 2013, Public Law 113-34 amended Public Law 93-435, to provide CNMI parity with the other U.S. island territories, by providing for the conveyance from the United States to the CNMI Government, the submerged lands and associated mineral rights located between the line of mean high tide and a line located three (3) geographical miles seaward from the coastlines of the CNMI, and permanently or periodically covered by tidal waters.

While Public Laws 93-435 and 113-34 refer to "geographical" miles rather than "nautical" miles, they are, in fact, synonymous, being a unit of measure derived from the length of an arc-minute of the earth's meridian. Historically, due to varying estimates of the size of the earth, different values have been used by different nations. Beginning on July 1, 1954, the Departments of Commerce and Defense jointly adopted the International Nautical Mile of 1,852 meters as the standard definition of the nautical mile[2]. All mileage references in this document will be "nautical" miles which is the International Nautical Mile.

On January 15, 2014, PP 9077 excepted from the conveyance of submerged lands from the United States to CNMI, the submerged lands adjacent to the islands of Farallon de Pajaros, Maug, and Asuncion until the Secretaries and the CNMI Government enter into an agreement for coordination of management that ensures the protection of MTMNM within the conveyed area.

The Secretaries and the Governor of CNMI (the Signatories) subsequently developed a Draft Memorandum of Agreement (MOA) to establish the terms and conditions for the coordination of management of the excepted submerged lands that was required to initiate the process for their conveyance. The Signatories further agreed to develop and implement coordinated resource management for the long-term comprehensive conservation and protection of the excepted submerged lands in a manner consistent with the protection of MTMNM resources as set forth in PP 8335.

[2] "Weights and Measures Standards of the United States, a Brief History" National Bureau of Standards Special Publication 447, Updated March 1976

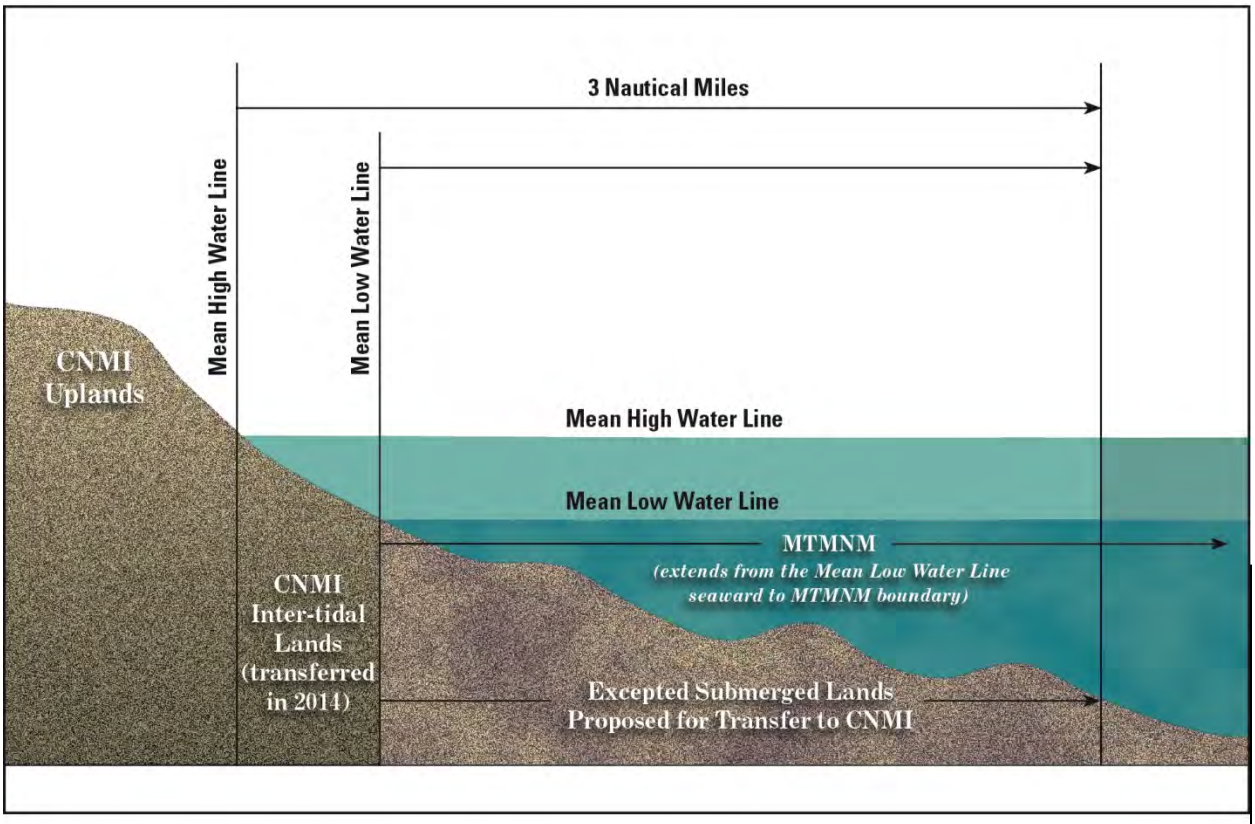


Figure 1. Tidal Baseline of the Excepted Submerged Lands Proposed for Transfer to CNMI.
CNMI owns the Farallon de Pajaros, Maug, and Asuncion Islands' uplands; and, the three islands' inter-tidal areas between the Mean High and Mean Low Water Lines were transferred to CNMI in 2014 in an amendment to the Territorial Submerged Lands Act. The excepted submerged lands proposed for transfer to CNMI are adjacent to the three islands and include lands permanently covered by tidal waters up to but not above the mean low water line and seaward to a line three miles distant from the mean high tide line of each island. The Monument extends from the Mean Low Water Line around each island seaward to 50 nmi.

1.2 PROPOSED ACTION

DOI proposes to 1) enter into the MOA to ensure that management of the excepted submerged lands is consistent with PP 8335, and 2) convey submerged lands and associated mineral rights of the United States to the CNMI Government, via a proposed patent with a reserved easement. The excepted submerged lands are adjacent to the islands of Farallon de Pajaros (Uracas), Maug, and Asuncion, which include lands permanently covered by tidal waters up to but not above the mean low water line and seaward to a line three (3) miles distant from the mean high tide line of each of these islands, which were included in the Monument, established by PP 8335 of January 6, 2009, pursuant to Section 2 of the Antiquities Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431) (see Figure 1 and the maps in Appendix A). This area, which includes the submerged lands within the Maug caldera, is referred to as the Northern Islands Submerged Lands (NISL) in this Draft EA. The NISL encompasses approximately 171 square miles.

PP 8335 provides that the Secretaries shall not allow or permit any appropriation, injury, destruction, or removal of any feature of the MTMNM, except as provided for by PP 8335, or as otherwise provided for by law.

In this Draft EA, the USFWS identifies the purpose and need for the conveyance, describes two alternative courses of action, and analyzes the consequences of those alternatives. This Draft EA was prepared in compliance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. 4321 et seq.).

1.3 PURPOSE AND NEED

The purpose of the proposed action is to complete the conveyance of submerged lands and associated mineral rights adjacent to the islands of Farallon de Pajaros, Maug, and Asunción to CNMI, under terms and conditions that ensure they are managed in a manner consistent with the protection of MTMNM resources as set forth in PP 8335.

The proposed action is needed because on January 15, 2014, pursuant to section 1(b)(vii) of Public Law 93-435, as amended by Public Law 113-34, PP 9077 excepted from the conveyance of submerged lands from the United States to CNMI, the submerged lands adjacent to the islands of Farallon de Pajaros, Maug, and Asuncion permanently covered by tidal waters up to the mean low water line and extending three (3) miles (~5.56 kilometers [km]) seaward from the mean high tide line. PP 9077 provided that the submerged lands adjacent to the islands of Farallon de Pajaros, Maug, and Asuncion could be conveyed to CNMI under the provisions of the TSLA after the Secretaries and the CNMI Government enter into an agreement for coordination of management that ensures the protection of the MTMNM within the conveyed area.

1.4 RELATED ACTIONS

The conveyance of submerged lands not excepted by PP 9077 was effective by operation of the TSLA as amended, on January 16, 2014, and the mineral rights associated with those submerged lands were conveyed by Patent signed March 13, 2014, and accepted by the Governor of CNMI on March 27, 2014.

1.4.1 USFWS REFUGE UNIT DESIGNATIONS

On September 25, 2014, the USFWS corrected its interpretation of SO No. 3284 and clarified that three (3) underwater volcanoes or seamounts of the Volcanic Unit of the MTMNM: Daikoku, Ahyi, and Maug, were not included within the National Wildlife Refuge System (NWRS). These volcanoes were originally given refuge status as part of the Volcanic Unit of the MTMNM, as specified by SO No. 3284. However, it was determined that they also occur within the boundary of the Islands Unit, which according to SO No. 3284, is not to be managed as a unit of the NWRS.

While the Daikoku, Ahyi, and Maug volcanoes are not part of the NWRS, they continue to be managed by the USFWS and protected as part of the MTMNM. The National Wildlife Refuge System Administration Act (NWRSAA) applies to the remainder of the Volcanic Unit/Arc of Fire NWR and the Trench Unit/Marianas Trench NWR, and as such, the USFWS retains the authority to regulate activities within these MTMNM Units pursuant to the authority of the NWRSAA, PP 8335, SO 3284, and 16 U.S.C. 460k-3.

1.5 DECISION TO BE MADE

Based on the analysis documented in this Draft EA, DOI, in consultation with DOC, will determine whether to convey the NISL to the CNMI Government via a patent, or retain the submerged lands as properties of the United States.

DOI and DOC will determine whether the MOA satisfies the PP 9077 requirement for an agreement "*for the coordination of management that ensures the protection of the marine national monument within the excepted area*," and if so, whether the conveyance should be initiated. Should a transfer decision be made, this EA will inform the decision whether a Finding of No Significant Impact (FONSI) can be reached. Any FONSI would identify the alternative selected for implementation and the rationale behind the decision. A decision to transfer would be subject to a 60-day Notice/Congressional review period as required by the Territorial Submerged Lands Act, 48 USC 1705(c). After the Congressional review period, unless directed differently by Congress, the selected alternative would be implemented. If a FONSI cannot be reached, an Environmental Impact Statement would be prepared.

The decision-maker for this EA is the USFWS Regional Director for the Pacific Region, delegated under authority of Secretary's Order 3284. The decision-maker for the conveyance of the patent is the DOI Secretary. DOC–NOAA and the government of CNMI are cooperating agencies. As a cooperating agency, NOAA will independently review the EA and determine whether to adopt it prior to signing the MOA.

CHAPTER 2. ALTERNATIVES

Two alternatives are being considered: retaining the NISL and associated mineral rights as properties of the U.S. Government, or conveying the NISL and associated mineral rights to the Government of the CNMI.

2.1 ALTERNATIVE 1 – CURRENT LAND STATUS (NO ACTION)

Under Alternative 1, the Current Land Status Alternative (No Action), the United States would not convey the NISL and associated mineral rights to CNMI. Under the No Action Alternative, the USFWS and NOAA would continue to coordinate their management of the submerged lands, associated waters, and fishery-related activities of the Islands Unit, in consultation with CNMI, per the directives of PP 8335, and would implement activities to address priority management needs based on agency-specific authorities and an integrated management plan.

Subject to such terms and conditions as DOI deems necessary for the care and management of the objects of the MTMNM, DOI would continue to have management responsibility for the NISL, in consultation with DOC, except that DOC would continue to have the primary management responsibility, in consultation with DOI, with respect to fishery-related activities regulated pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.) (MSA); and any other applicable authorities. The Secretaries would not allow or permit any appropriation, injury, destruction, or removal of any feature of the NISL except as provided for by PP 8335 or as otherwise provided for by law.

The Secretaries would take appropriate action pursuant to their respective authorities under the Antiquities Act and the MSA, and such other authorities as may be available to implement PP 8335, to regulate fisheries, and to ensure proper care and management of the NISL. The Secretaries would continue to permit scientific research and exploration within the Monument as per their respective authorities and management responsibilities.

DOC would continue to prohibit commercial fishing within the NISL. Subject to such terms and conditions as DOC deems necessary for the care and management of the objects of the Islands Unit, including the NISL, DOC would ensure, consistent with Executive Order 12962, that sustenance, recreational, and traditional indigenous fishing be managed as a sustainable activity consistent with other applicable law. With respect to traditional indigenous fishing, the Secretaries would consider any determination made by the CNMI Government concerning customary practices in the NISL.

2.2 ALTERNATIVE 2 – NORTHERN ISLANDS SUBMERGED LANDS CONVEYANCE (PREFERRED ALTERNATIVE)

Under Alternative 2, our preferred alternative (or Northern Islands Submerged Lands Conveyance alternative), DOI by patent with a reserved easement, would convey ownership of the NISL to the CNMI Government. Subject to those powers, rights, and interests reserved in the United States under the TSLA, primary management responsibility would then rest in CNMI within the 0-3 miles including for the benthic resources, the living marine resources of the associated water column, and associated mineral rights within and subterranean of the NISL.

Upon conveyance by the United States of the NISL to CNMI and pursuant to the MOA, the USFWS and NOAA would continue management responsibilities for the conveyed submerged lands, in consultation with the CNMI Government, until such time that the CNMI Government notifies the Secretaries in writing of its intent to assume either all or a portion of the management responsibilities of the conveyed submerged lands, and the effective date of such assumption. During this interim period, USFWS and NOAA would continue to consult with the CNMI Government on management of the conveyed submerged lands.

Upon assuming such management responsibilities, and in coordination with USFWS and NOAA, CNMI would manage the NISL consistent with the purposes and requirements of PP 8335 and PP 9077, the Commonwealth Constitution, and other applicable laws. DOI would reserve an easement for the United States to ensure that the MTMNM resources are forever maintained consistent with PP 8335 and PP 9077.

The proposed action consists of the following two interrelated actions.

1. The Secretaries and the CNMI Government would develop and sign a MOA that establishes the terms and conditions for the coordination of management of the NISL. Such coordination would include CNMI coordinating their management within their NISL area of jurisdiction with the USFWS and NMFS's respective areas of jurisdiction; and USFWS and NMFS coordinating the management of their respective authorities of jurisdiction in the 3 to 50 miles (~5.6 to ~92.6 km) area beyond the NISL with each other and CNMI, consistent with PP 8335.
2. DOI would develop a patent with a reserved easement that requires management of the NISL consistent with PP 8335.

The MOA does not constitute a financial obligation on any party. The Monument's Management Officials would manage and use their own funds in carrying out the responsibilities of the MOA. While there are no funding arrangements or agreements associated with the proposed submerged lands transfer, there are several federal funding opportunities including grants and other programs available through the USFWS, NOAA and other agencies. Each funding source has its own purposes, requirements and restrictions. Any future expedition of federal grant funds to support conservation, management, and enforcement in the NISL would be subject to separate analysis under NEPA, as appropriate, when project details are known.

Following conveyance of the NISL, the MOA establishes the principles for the future coordination of management of the NISL which would:

- preserve and protect natural resources, including, but not limited to bird, wildlife, and plant species as required by section 2 of Article XIV of the Commonwealth Constitution;
- recognize that the Monument is a place of maritime cultural significance for the Chamorro and Carolinian residents with cultural connections throughout the Mariana Islands by managing, to the extent compatible with the conservation and management goals of PP 8335, the Monument resources within the NISL in a manner that honors the unique heritage of the indigenous cultures;
- provide protections for resources when there is uncertainty regarding impacts of activities that are to be permitted in the NISL;

- prohibit the appropriation, injury, destruction, or removal of any Monument object or resource within the NISL, except as may be allowed under PP 8335;
- permit scientific exploration and research within the Monument in a manner consistent with PP 8335;
- permit sustenance, recreational, and traditional indigenous fishing in a sustainable fashion consistent with PP 8335 and applicable CNMI and Federal laws;
- prohibit commercial fishing and mineral extraction;
- adopt best practices for an adaptive management approach that incorporates conservation management strategies, scientific principles, and traditional ecological knowledge;
- consider scientific exploration, research advances, and technology to learn about and develop greater understanding of the Monument objects and resources;
- enhance public appreciation of the unique character and environment of the Monument, and promote conservation management through outreach and education activities;
- establish effective monitoring of and enforcement for permitted activities;
- allow for innocent passage in the NISL and not restrict navigation, overflight, and other internationally recognized lawful uses of the sea; and
- maintain consistency with provisions of PP 8335 regarding actions of the Armed Forces and international law.

The patent would reserve to the United States an easement in perpetuity to ensure that the NISL, and the resources associated with such lands are forever managed and maintained for the protection of the Monument or other federal conservation status, unless such conservation status is withdrawn by an Act of Congress. The United States and CNMI would be bound by the terms of the easement which stipulates that the NISL would be maintained by the Government of CNMI consistent with the Monument or other federal conservation status of adjacent federal submerged lands. Under the present conservation status, the Government of the CNMI shall not authorize or allow commercial fishing or development on such lands or in the navigable waters overlaying such lands.

Nothing in the easement would limit the rights of the CNMI Government to manage sustenance, recreational, and traditional indigenous fishing within the NISL as a sustainable activity in accordance with PP 8335 or conduct or authorize to undertake bona fide scientific research, nor would it limit the rights of CNMI, DOI, and DOC for coordination of their respective management as set forth in the MOA. Nothing in the conveyance or easement would limit the reserved rights, navigational servitude, and powers of regulation and control of the United States as set forth in the TSLA, or other applicable federal law. In addition, nothing in the easement would require the Government of CNMI to manage or maintain a more protective conservation regime with respect to the NISL and associated natural resources than that regime authorized by applicable federal law for the adjacent federal submerged lands and associated natural resources.

Upon conveyance of the NISL, CNMI would have ownership of the submerged lands, and various rights with respect to the associated waters, and the Monument resources contained therein, which would be managed consistent with PP 8335. Although primary management responsibility is vested in CNMI, the United States through its reserved rights and powers, the MOA, and the reserved easement within the patent would continue to ensure the protection of Monument resources within the NISL. In addition, the Secretaries would take appropriate actions

to protect Monument resources under existing non-place-based authorities including but not limited to, the Endangered Species Act and the Marine Mammal Protection Act.

Under Alternative 2, the United States would retain all of its navigational servitude and rights in and powers of regulation and control of the NISL and the navigable waters overlying such lands, for the constitutional purposes of commerce, navigation, national defense, and international affairs, all of which shall be paramount to, but shall not be deemed to include, proprietary rights of ownership, or the rights of management, administration, leasing, use, and development of the natural resources as provided by 48 USC § 1706.

As directed by PP 8335, NOAA and USFWS are working to complete a Monument Management Plan (MMP) for the proper care and management of the objects identified in PP 8335. The CNMI Government is participating as a cooperating agency in developing the plan. The Secretaries of Commerce and the Interior would incorporate into the MMP provisions for coordination of management in protecting the coral reef ecosystems and related marine, cultural and historic resources, and objects of historic or scientific interest of the Monument.

Consistent with PP 8335, the MMP would, as appropriate, provide for:

- management of the Islands Unit, in consultation with the CNMI, including designation of specific roles and responsibilities and the means for consultations on management decisions as appropriate, consistent with the respective authorities of the CNMI Government and the Secretaries of Commerce and the Interior;
- public education and outreach programs about coral reef ecosystems and other Monument resources and species, and efforts to conserve them;
- traditional access by indigenous persons for culturally significant subsistence, cultural, and religious purposes;
- a program to assess and promote Monument-related scientific exploration and research, tourism, and recreational and economic activities and opportunities in the CNMI;
- a mechanism to permit noncommercial fishing as a sustainable activity consistent with the purposes, terms, and objectives of PP 8335, upon consideration of the best scientific information available; and
- programs for monitoring and enforcement to ensure scientific exploration and research, tourism, and recreational and economic activities do not degrade Monument coral reef ecosystems or related marine resources and species, or diminish it's natural character.

The MMP and its implementing regulations would impose no restrictions on innocent passage in the territorial sea or otherwise restrict navigation, overflight, and other internationally recognized lawful uses of the sea, and would incorporate the provisions of PP 8335 and PP 9097 regarding Armed Forces actions and compliance with international law and would also specifically acknowledge 48 USC 1706 reserved rights. The MMP would be subject to additional NEPA compliance, including the development of a separate EA or Environmental Impact Statement, as appropriate.

2.3 ALTERNATIVES CONSIDERED BUT EXCLUDED FROM DETAILED PLANNING

No alternatives were considered but excluded from detailed planning. PP 9097 requires in order for the land to be subsequently conveyed that the Secretaries and the CNMI Government first enter into an agreement for coordination of management that ensures the protection of the MTMNM within the conveyed area.

2.4 ISSUES

The issues that have been identified by the USFWS to be important in the decision making process are biological and social in nature. No impacts would be expected to the physical resources such as air and water quality, climate patterns, or minerals. No economic impacts are expected as commercial activities such as commercial fishing and mining are currently banned and would remain banned within the NISL.

The issues addressed in this EA include potential impacts to species listed as threatened or endangered under the Federal Endangered Species Act, other biological resources, activities and exercises of the Armed Forces (including those carried out by the United States Coast Guard), and on the traditional uses within the NISL.

CHAPTER 3. AFFECTED ENVIRONMENT

This section provides an overview of marine and cultural resources within the northern Mariana Archipelago and a discussion of the marine conditions around the three islands: Farallon de Pajaros, Maug, and Asuncion. Only those conditions relevant to the proposed alternatives are discussed. Much of the information presented in this section is derived from reports generated by Mariana Archipelago Reef Assessment and Monitoring Program (MARAMP) by NOAA's Coral Reef Ecosystem Division (CRED), which is discussed below.

3.1 MARIANA ARCHIPELAGO REEF ASSESSMENT AND MONITORING PROGRAM

One of the few data sources about coral reef ecosystems in the northern islands comes from the NOAA Pacific Island Fisheries Science Center's (PIFSC) MARAMP cruises that occurred in 2003, 2005, 2007, 2009, 2011, and 2014. Although surveys have been conducted around each of the three islands in the Islands Unit, survey coverage varied based on cruise schedules and island accessibility.

Biological, physical, and chemical surveys were conducted to document the conditions and processes influencing the coral reef ecosystems around the islands of the Mariana Archipelago. This program was the first in-depth survey of subsurface biological conditions conducted of the archipelago. Prior to these surveys, little or no information was available about the marine habitats or species composition, distribution, and abundance.

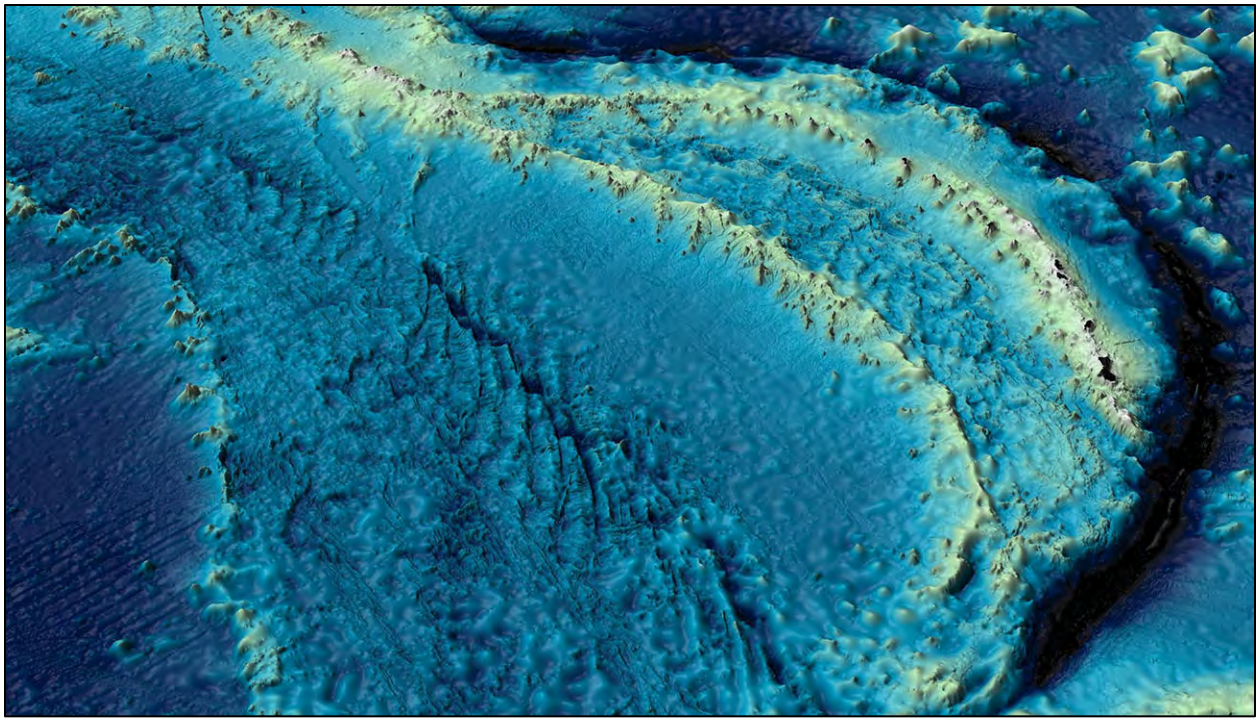


Figure 2. The Mariana Archipelago Brainard et al. 2012

Benthic habitat mapping data were collected using multibeam sonar surveys. Data on the condition, abundance, diversity, and distribution of biological communities and on offshore reefs around the three islands was collected using towed-diver, Rapid Ecological Assessment (REA), and towed optical assessment device (TOAD) surveys.

Towed-diver surveys generate a broad overview of substrate types and associated large-fish and benthic communities. REA surveys were carried out at selected forereef locations and produce more detailed, site-specific information. TOAD surveys and a subset of towed-diver-survey data were used to characterize the marine habitats.

Results of the 2003 to 2007 surveys were compiled in the report: Coral Reef Ecosystem Monitoring Report of the Mariana Archipelago: 2003–2007 (Brainard et al. 2012). The report is available online at: www.pifsc.noaa.gov/cred/coral_reef_ecosystem_monitoring_reports.php#sp-12-01. Refer to that document for a detailed discussion of what is summarized in this section of the EA. Unless otherwise attributed; all information in this section is from that report.

3.2 BIOLOGICAL RESOURCES OF THE NORTHERN MARIANA ARCHIPELAGO

Farallon de Pajaros, Maug, and Asuncion are the northern most islands of the Mariana Archipelago. The Archipelago formed within the last 5 million years by the subduction of the Pacific Plate under the Philippine Plate at the Mariana Trench, which is from 80-130 miles (130 to 210 kilometers [km]) east of the Archipelago. The islands are active or dormant stratovolcanoes.

The seafloor and land are characterized by moderate to steep slopes, which have been shaped by periodic explosive eruptions and landslides. The steep onshore and offshore slopes, narrow ridges, and few offshore terraces, result in total potential reef areas that are much smaller relative to the southern islands of the archipelago.

Visits to the Islands Unit in recent decades have been limited, and occurred mostly for research or for fishing. A primary reason for minimal human presence on these islands is their distance from major population centers and the travel costs. The biological communities within the Islands Unit remain relatively pristine due to minimal human presence in the area. Data collected from research cruises conducted in the Islands Unit indicate the marine resources there are diverse, include several federally protected species, and contain healthy ecosystems dominated by the presence of apex-predators such as sharks.

3.2.1 CORAL REEFS

Coral reef habitats are the building blocks of many marine coastal ecosystems. Found in the upper portions of the world's ocean where light is able to penetrate, coral reefs create habitat for a vast number of marine species.

The amount of coral reef found in the Mariana Archipelago and Guam depends on how coral reef ecosystems are described. Defining reef habitat as the hard-bottom substratum adjacent to the coastlines from the depths of 0 to 330 feet (0 to 100 meters), Hunter (1995) estimated the total coral reef area in the Mariana Archipelago and Guam to be 293 square miles (mi^2) (758 square

kilometers [km^2]). Based on the Rohmann et al. (2005) definition of a tropical coral ecosystem as benthic habitats that include unconsolidated sediments, mangrove, submerged vegetation, and uncolonized hardbottom, the coral reef ecosystem in Guam and the Mariana Archipelago inside the 100 fathom curve was estimated to be 290 mi^2 (750 km^2), of which 55.4 square miles (143.5 km^2) is present around the northern volcanic islands of the CNMI.

The coral coverage disparity between the older southern, limestone covered islands of Aguijan, Farallon de Mendinilla, Saipan, Rota, Tinian, and Guam; and the younger, northern volcanic islands of Farrallon de Pajaros, Maug, Asuncion, Argihan, Pagan, Alamagan, Guguan, Sarigan, and Anatahan, is largely due to volcanic activity and the relatively recent formation of the northern islands. Among the northern islands, coral diversity also varies significantly, with greater diversity around Maug and Asuncion (29 genera) than around Farrallon de Pajaros (17 genera).

Three coral species, all listed as Threatened under the ESA, are known to occur in the waters of the CNMI: needle coral (*Seriatopora aculeate*), *Acropora globiceps*, and blunt coral (*Acropora retusa*), though their abundance, distribution, and health in the NISL is not well understood. These species are subject to bleaching, disease, and loss of coral reef habitat, as are all coral species. Corals in the genus *Acropora* are particular susceptible to crown-of-thorns starfish (COTS) predation.

Historically, the overall condition of the corals in the northern islands was better than that of the southern islands, likely due to less anthropogenic influence. However, a thermal stress anomaly was centered over the northern islands in the summer of 2014, resulting in severe and widespread bleaching (CNMI BECQ; Heron et al. 2016). The full impacts of this bleaching event have yet to be determined due to the difficulty accessing the remote islands.

3.2.2 OTHER HABITAT TYPES

In addition to coral reef habitats, other substrates, or surfaces upon which a plant or animal can live such as sand, rock, and sea grass, are also important components of the tropical and subtropical benthic marine environments. Benthic refers to anything associated with or occurring on the bottom of a body of water, in this case the ocean bottom. Benthic habitats are particularly important in the Islands Unit because coral cover is relatively sparse. MARAMP habitat surveys found varying amounts of sand, macroalgae, and crustose coralline algae around the islands of Farallon de Pajaros, Maug, and Asuncion.

Macroalgae is an important constituent of marine habitats, as it is a major food source for many herbivorous fish. Macroalgae comprised a significant portion of the benthic substrate at both Maug and Asuncion (>12%), but is much less common (<4%) at Farallon de Pajaros. Although there was a significant difference in diversity, the most common species at all three islands were the brown algae *Lobophora* and the green algae *Halimeda*.

Other important habitat types described in MARAMP surveys are sand and coralline algae. Sand cover was highly variable, making up the entire habitat in some sites and absent from others. Regardless, sand cover was generally present in the highest percentages on the outer flanks and

shelves on the southeast sides of the islands. Across all MARAMP surveys, crustose coralline algae cover averaged 8% of the substrate, and existed in highest concentrations on the south and west sides of the islands.

3.2.3 FISH

Coral reefs and other benthic substrates of the Islands Unit are important habitats for a variety of fish species. The reef fish found around the Mariana Archipelago are representative of the wider Indo-Pacific fauna and the majority of species are widespread throughout the Indo-Pacific region (Myers 1988).

A total of 946 reef fish species are known to exist across the Mariana Archipelago, but only 427 species have been documented in the northern islands (Donaldson et al. 1994). The most common reef fish families in the northern islands are tangs, damsels, wrasses, and butterfly fish (Amesbury and Coleson 1996). Although species diversity is lower in the northern islands compared to the southern islands, MARAMP surveys show that biomass, or the total mass of living matter within an environment, is much greater. Total fish biomass across all trophic levels was three times greater off the northern islands than off the southern islands, and the biomass of large predators was found to be thirteen times greater.

Typical of many isolated islands and atolls, the number and sizes of apex-predators per unit area is much higher in the Islands Unit than in the waters around the inhabited southern islands. Large numbers of apex predators indicate a naturally flourishing ecosystem at every trophic level in the food chain. Sharks, snappers, and jacks are found in abundance around the islands of Farallon de Pajaros, Maug, and Asuncion. By comparison, the majority of fish around the southern islands are small reef-associated fish such as damselfish, surgeonfish, and parrotfish, while medium and large fish including apex predators are uncommon.

3.2.4 MACROINVERTEBRATES

Macroinvertebrate fauna, such as clams, sea cucumbers, and sea urchins, is quite diverse across the entire Mariana Archipelago, with over 500 species of marine mollusks (e.g., squid, octopus, clams, scallops, sea snails), 119 species of crustaceans (e.g. crabs, crayfish, shrimp, krill and barnacles), and 15 species of echinoderms (e.g., sea stars, sea urchins, sea cucumbers) (WPRFMC 1997).

Macroinvertebrates exist in relatively low numbers across the Islands Unit, compared to the abundance around the other islands in the Mariana Archipelago. However, the macroinvertebrate fauna around Maug is typical of the macroinvertebrate composite in Indo-Pacific waters. Giant clams occur in abundance along the southern coast of Maug.

During a 1977 study, a total of 130 different macroinvertebrate species were documented in the Islands Unit, including 64 gastropod and 21 echinoderm species (Eldredge 1977). In a later study by Eldredge (1983), sea urchins, crabs, gastropods, and abalone were documented in varying abundances around the islands of Agrihan, Farrallon de Pajaros, Anatahan and Asuncion.

3.2.5 MARINE MAMMALS

All marine mammals are protected in U.S. waters by the Marine Mammal Protection Act of 1972 (MMPA), and some species receive additional protection under the Endangered Species Act (ESA). The ESA-listed marine mammals that may occur in the Mariana Archipelago are the sperm whale (*Physeter macrocephalus*), humpback whale (*Megaptera novaeangliae*), sei whale (*Balaenoptera borealis*), blue whale (*Balaenoptera musculus*), and fin whale (*Balaenoptera physalus*).

Sperm whales are widely distributed in the global ocean. In the Pacific Ocean sperm whales are divided into three stocks. The stock that occurs in the Mariana Archipelago is part of the Asian stock (Tillman 1977). Based on extrapolations from research on local populations, the best estimate for the world-wide population of sperm whales is between 200,000 and 1,500,000 (NMFS 2010a). Estimates for the number of sperm whales that occur in the Mariana Archipelago are unavailable.

The North Pacific population of the humpback whale is divided into several stocks depending on where the winter grounds are located. The stock that occurs in the Mariana Archipelago is part of the Western Pacific stock that migrates into the region every winter (NMFS 1991). However, information on the number of humpbacks that winter in the Mariana Archipelago on an annual basis is unavailable.

Although sei whales are distributed throughout the world's oceans they are one of the least studied whale species, therefore, data is limited. NMFS recognizes two stocks of sei whales in the Pacific; the Eastern North Pacific and the Hawaiian (NMFS 2011). Because of the limited amount of data, there are no reliable population estimates for sei whales, and no estimates for the number of whales that might visit the Marianas during the year.

Blue whales are a cosmopolitan species of baleen whales with multiple stocks and three subspecies. They are the largest animals ever known to have lived on Earth. Their populations were severely depleted by commercial whaling during the mid-twentieth century. Although there is evidence that the population along the California coast is increasing, there is no reliable estimate of blue whale abundance in the North Pacific and no estimates for the number of whales that might visit the Marianas during the year (NMFS 1998).

Fin whales, the second-largest species of whale, are widely distributed in the world's oceans. Fin whales in U.S. waters are divided into four stocks: Alaska (Northeast Pacific), California/Oregon/Washington, western north Atlantic, and Hawaii, which includes the islands of the northern Mariana archipelago. Populations were also impacted by commercial whaling, but as with other whale species, there is some indication the population may be increasing in certain locations (NMFS 2010b). As with the other whale species, there is no reliable population estimate of fin whales off the Northern Mariana Islands.

There are several other marine mammals that have been recorded in the Mariana Archipelago that are not listed under the ESA, but are protected under the MMPA. Some of these species are residents of the archipelago, while others are seasonal visitors or merely transit through the area.

Short-finned pilot whale. NOAA

Whale species not protected by the ESA that have been documented in the Mariana Archipelago include: short-finned pilot whales (*Globicephala macrorhynchus*), pygmy killer whales (*Feresa attenuata*), Bryde's whales (*Balaenoptra ednei*), Cuvier's beaked whales (*Ziphius cavirostris),* melon-headed whales (*Peponocephala electra*), pygmy sperm whales (*Kogia breviceps*), and dwarf sperm whales (*Kogia sima*).

Other cetaceans that have been encountered in the archipelago include several dolphin species including spinner dolphins (*Stenella longirostris*), bottlenose dolphins (*Tursiops truncatus*), pantropical spotted dolphins (*Stenella attenuata*), striped dolphins (*Stenella coeruleoalba*), Risso's dolphins (*Grampus griseus),* and rough-toothed dolphins (*Steno bredanensis*) (Fulling et al. 2011). Reported encounters typically come from chance encounters or from stranding reports.

There have been only a limited number of marine mammal surveys in the Mariana Archipelago. Most of these efforts have come from the Department of Defense (DoD) or NOAA's National Marine Fisheries Service (NMFS). One of the first, and most complete marine mammal surveys was the Mariana Islands Sea Turtle and Cetacean Survey (MISTCS), which was funded by DoD. This survey, conducted from January to April 2007, covered over 6,850 miles (11,033 km) of trackline, which resulted in 153 total sightings of 13 different species. The most frequently sighted species were the sperm whale (n=23), followed by Bryde's whale (n=18) and sei whales (n=16) (Fulling 2007).

Subsequent to the 2007 surveys, both the Navy and PIFSC have conducted numerous surveys around Guam and the islands of the CNMI. From 2010 to 2012, PIFSC spent 75 days surveying cetaceans around the Mariana Archipelago. Although confined primarily to the southern islands, and to those areas accessible by small vessels, these surveys provide the most complete record of cetacean species found in the archipelago to date. Ninety-five cetacean groups were documented including: spinner dolphins, bottlenose dolphins, pantropical spotted dolphins, short-finned pilot whales, pygmy killer whales, sperm whales, and dwarf sperm whale. The most common cetacean

species recorded was the spinner dolphin, which accounted for 55% of the total number of encounters. The next most common species were the pantropical spotted dolphin, the short-finned pilot whales, and the bottlenose dolphin (PIFSC 2013).

3.2.6 SEA TURTLES

All Pacific sea turtle species are listed as endangered under the Endangered Species Act. Three turtle species are known to occur in Mariana waters. They are the leatherback turtle (*Dermochelys coriacea*), hawksbill turtle (*Eretmochelys imbricata*), and the green turtle (*Chelonia mydas*). Waters off the Northern Islands provide migratory and foraging habitat. There are no reports of sea turtle nesting on Farallon de Pajaros, Maug, or Asuncion.

The leatherback turtle is typically associated with continental shelf habitats and pelagic environments (NMFS and USFWS 1998b). Research has shown that leatherback turtles found in the northern and central Pacific Ocean originate from nesting areas located south of the equator in the western Pacific and the eastern Pacific along the Americas (Dutton et al. 1999). There are no reports of leatherback turtles nesting in the Mariana Archipelago. The population of Pacific leatherback turtles has declined sharply in the past 20 to 30 years, mostly from incidental catch in fisheries (NMFS and USFWS 1998b).

Hawksbill turtles are circumtropical in distribution, generally occurring between 30° N and 30°S latitudes (NMFS and USFWS 1998c). Along the far western and southwestern Pacific, hawksbill turtles nest on the islands and mainland of Southeast Asia, from China and Japan, throughout the Philippines, Malaysia, and Indonesia, to Papua New Guinea, and the Solomon Islands (McKeown 1977).

Hawksbill turtle. NOAA

The green turtle is a circumglobal species found in tropical seas and, to a lesser extent, in subtropical waters with temperatures above 20° C (NMFS and USFWS 1998a). Although the Hawaiian population of green turtles has increased significantly over the last 25 years, the global population trend is still declining. A cooperative study of isolated reefs in the Mariana Archipelago conducted by the CNMI DFW and NMFS provided a resident population estimate of 1,000 to 2,000 green turtles in the Mariana Archipelago (NMFS and USFWS 1998a). On April 6, 2016, NMFS and USFWS issued a final rule to list 11 distinct population segments (DPSs) of the green sea turtle under the ESA, superseding the 1978 final listing rule for green turtles. The NISL is within the Central West Pacific DPS which was listed as Endangered. The rule becomes effective May 6, 2016 (81 FR 20057).

3.2.7 SEABIRDS

Migratory bird species, including most seabirds, are protected by the Migratory Bird Treaty Act, which prohibits the take of migratory birds, their nests, and eggs. Of the seabird species that may be found in the CNMI, three are listed under the ESA as Threatened or Endangered: Hawaiian Petrel (*Pterodroma sandwichensis*), Newell's shearwater (*Pluvialis fulva*), and short-tailed albatross (*Phoebastria albatrus*)

Of the seabird species that may be found in the Mariana Archipelago, some are considered residents while others are transients. Resident species include the black noddy (*Anous minutes*), brown noddy (A. *stolidus*), great frigatebird (*Fregata minor*), white tern (*Gygis alba*), white-tailed tropicbird (*Phaethon lepturus*), red-tailed tropicbird (P. *rubricauda*), wedge-tailed shearwater (*Puffinus pacificus*), sooty tern (*Sterna fuscata*), masked booby (*Sula dactylatra*), brown booby (S. *leucogaster*), and red-footed booby (S. *sula*). Transient seabirds include the Newell's shearwater, Leach's storm-petrel (*Oceanodroma leucorhoa*), Matsudaira's storm-petrel (*O. matsudairae*), short-tailed shearwater (*Puffinus auricularis*), and Audubon's shearwater (*P. iherminieri*). All of these species may forage in the waters of the Northern Islands.

3.2.8 THREATENED AND ENDANGERED SPECIES

Species listed under the federal Endangered Species Act that may occur in the waters off the Northern Islands are provided in Table 1. The list of species was provided by NMFS and USFWS. These species may be permanent residents (such as the corals) or may only exhibit transient use of the Northern Islands waters at certain times of the year, as may be the case with the whale species.

Table 1. Species listed under the Endangered Species Act that may occur in the NISL

Common Name	Scientific Name	ESA Status*
Hawaiian petrel	*Pterodroma sandwichensis*	E
Newell's shearwater	*Puffinus auricularis*	T
Short-tailed albatross	*Phoebastria albatrus*	E
Blue whale	*Balaenoptera musculus*	E
Fin whale	*Balaenoptera physalus*	E
Humpback whale	*Megaptera novaeangliae*	E
Sei whale	*Balaenoptera borealis*	E
Sperm whale	*Physeter macrocephalus*	E
Green sea turtle	*Chelonia mydas*	T
Hawksbill turtle	*Eretmochelys imbricata*	E
Leatherback turtle	*Dermochelys coriacea*	E
Loggerhead sea turtle	*Caretta caretta*	E
Olive Ridley sea turtle	*Lepidochelys olivacea*	T
Scalloped hammerhead shark	*Sphyrna lewini*	T
Needle coral	*Seriatopora aculeate*	T
No common name	*Acropora globiceps*	T
Blunt coral	*Acropora retusa*	T

* E = Endangered; T = Threatened

Of the three listed seabirds that may occur off the Northern Islands (Hawaiian petrel, Newell's shearwater, and short-tailed albatross) only Newell's shearwater are known to forage in the waters of the Northern Islands.

In the western Pacific, olive Ridley sea turtles typically occur in tropical and warm temperate waters from Australia through Southeast Asia. While they may be present in the waters off the Northern Mariana Islands, there are no documented occurrences in the waters or of nesting on the three islands.

The scalloped hammerhead shark in the eastern Pacific belongs to the Indo-West Pacific distinct population segment (DPS). They are highly desired for the shark fin trade because of their fin size and high fin ray count. They are caught in a variety of fisheries. NMFS identified overutilization for commercial and/or recreational purposes as a significant threat contributing to the extinction risk of the four scalloped hammerhead shark DPSs, including the Indo-West Pacific DPS (NMFS 2014). Their use of the waters off the Northern Mariana Islands is not known.

The USFWS species list included the Micronesian megapode (*Megapodius laperouse*), Mariana fruit bat (*Pteropus mariannus mariannus*), and Marianas/Slevin's skink (*Emoia slevini*). These species are all terrestrial and do not forage or otherwise use the marine environment, and would not occur off the coasts of the three northern islands.

3.3 CULTURAL RESOURCES OF THE NORTH MARIANA ARCHIPELAGO

The known human history of the Mariana Archipelago began about 3,500 years ago when Asians, who were the ancestors of the Chamorro people, the indigenous peoples of the Mariana Islands, arrived in the archipelago. Contact with the Western world began when Magellan landed on Guam in 1521. Spain claimed the islands in 1565. Disease and conflicts decimated the Chamorro population and at the turn of the 18th century, Spain moved all of the remaining Chamorro people to Guam and Rota. There has been no permanent inhabitation of Maug and Asuncion since that time. Spanish, Filipino, and Carolinian immigrants were later brought in to resettle the inhabitable islands. Farallon de Pajaros is, and has probably always been, permanently uninhabited because of its inhospitable terrain and frequent volcanic activity.

The Mariana Islands remained under Spanish control until the end of the Spanish American War in 1898, when Guam was placed under the control of the United States.

Germany bought all the other islands of the Mariana Archipelago from Spain in 1899 with the intent of establishing copra (dried meat of the coconut used to extract coconut oil) plantations. During this period, Germany also let contracts for collection of exotic bird feathers for the European and Japanese hat trade. During this time, Japanese bird catchers employed on these islands may have established temporary residences, and other fishing or hunting parties may have also periodically resided on Maug and Farallon de Pajaros.

After World War I, the League of Nations stripped Germany of all its overseas possessions and awarded Japan administrative authority over the Mariana Islands, except for U.S. controlled Guam.

Prior to and during World War II a Japanese weather station and fish processing plant were established on Maug. After the end of World War II, the United Nations created the TTPI, which was administered by the United States, including all the Mariana Islands except for Guam. Guam became a U.S. territory in 1950 (Rogers 1995).

In 1975, the people of the Northern Mariana Islands voted to become the Commonwealth of the Northern Mariana Islands, and in 1976 the U.S. Congress approved a covenant to establish the CNMI in political union with and under the sovereignty of the United States.

3.4 THE ISLANDS OF THE NORTH MARIANA ARCHIPELAGO

In this section, benthic habitat characteristics and the marine environment of Farallon de Pajaros, Maug, and Asuncion are described.

3.4.1 FARALLON de PAJAROS

Farallon de Pajaros, also known as Uracas, is the northernmost island in the Northern Mariana Archipelago, approximately 42 miles (68 km) northwest of Maug and approximately 370 miles (595 km) north of Saipan. It is the top of an active stratovolcano with a maximum elevation of 1,180 feet (360 meters). It is located at latitude 20° 31’ N and longitude 144° 54’ E. The island is 1.2 miles (2 km) long and 1 mile (1.7 km) wide, with an area of approximately 1 mile^2 (2.5 km^2). Farallon de Pajaros earned the nickname “The Lighthouse of the Western Pacific” because it is the most active volcanic island in the Mariana archipelago having erupted at least 16 times since 1864, most recently in 1978.

The island’s steep slopes were formed by frequent flows of lava and ash. Lava poured not only from the summit, but also from fissures on the volcano flanks, which created platforms along the coast. Both summit and flank vents have been active at Farallon de Pajaros in recent history. Much of the island is covered in lava, cinders, and ash.

Bathymetry data acquired by NOAA’s CRED during MARAMP surveys indicates the steep onshore slopes of the island continue underwater, forming steep submarine flanks. These flanks are incised by ridges that radiate out from depths of less than 100 feet (30 m) to 1,300 to 2,000 feet (400 to 600 m) below the surface.

The variable topography and oceanographic conditions around Farallon de Pajaros provides highly variable coral reef habitat. Overall, live, hard-coral cover on forereef habitats is low compared to observations at other islands in the Mariana Archipelago. Forereef habitats are generally loose boulders and rubble that create inhospitable environments for prolonged coral growth. Conditions are most extreme in the northeast, southeast, and south regions, where high wave energy causes regular overturning of the loose substrate.

Off the west coast, forereef habitats of medium to medium-high complexity include boulders on sand and patches of rocky reef. This region is characterized by low ambient wave activity and medium episodic activity, suggesting that this area is relatively sheltered compared to the rest of this island. Estimates of coral cover were consistently highest in this region, compared to other

Rocky terrain on most flanks of Farallón de Pájaros creates inhospitable habitat for coral.
Robert Schroeder, NOAA

regions surrounding the island. Mean large-fish and total fish biomass were also highest off the west coast, where sharks and jacks were common. Large fish biomass was the highest in the waters off of Farallon de Pajaros compared to all other islands of the Mariana Archipelago.

3.4.2 MAUG

Maug consists of three steep-sided, exposed islets separated by deep-water channels. The islets are the above sea-level remnants of what is now a largely submerged volcano. The islets are individually named and go by English and Japanese names: “North” or “Kita-shima” is 744 feet in height (227 meters); “East” or “Higashi-shima” is 705 feet in height (215 meters); and “West” or “Nishi-shima” rises 583 feet (178 meters) above sea level. Maug is located at 20° 2’ N, longitude 145° 13’ E, approximately 330 miles (530 km) north of Saipan. The three islets have a total area of approximately 0.8 miles^2 (2.1 km^2). The outer shore of the three islets is 2.1 miles (3.3 km) in diameter. The inner diameter of the submerged caldera is approximately 1.4 miles (2.2 km).

Maug’s caldera–islet structure is unique in the Mariana Archipelago. The volcano was dormant for years, allowing lava to cool and plug its vents. It eventually became active again and immense pressure built up under the plugged vents, causing the volcano to explode, giving Maug its current shape. Each islet remnant has steep cliffs made of columnar basalt. The outer flanks of Maug are characterized by the steep slopes typical of other northern islands. The presence of a number of submarine volcanic dikes protrude seaward, increasing habitat complexity by providing vertical relief and structure. High concentrations of sea fans, other gorgonians (e.g., sea whips), and corals have been observed in these areas.

These steep slopes plunge to depths greater than 650 feet (200 meters) below the surface and then rise again in the center of the caldera to depths of less than 65 feet (20 meters). The steep slopes within the caldera provide a protected environment that generally supported greater than 10 percent live, hard-coral cover.

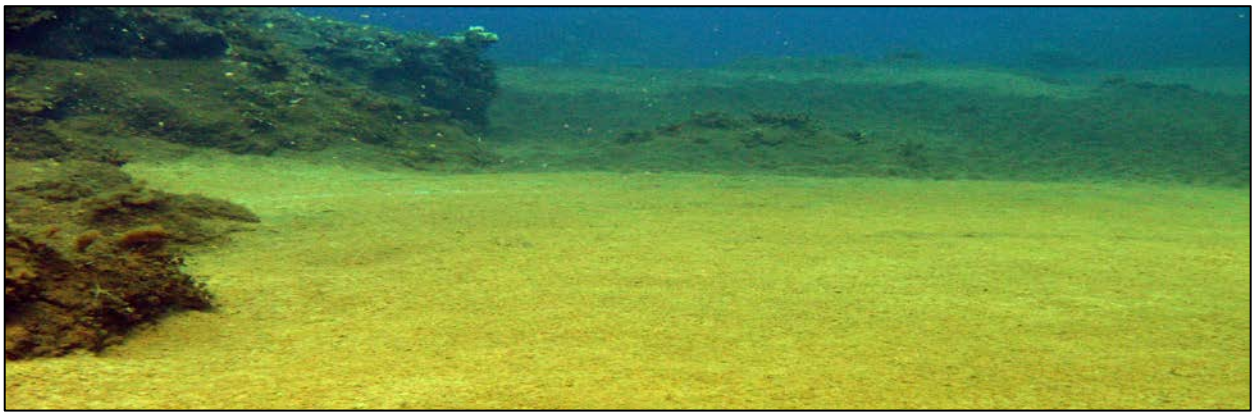
The three islands of Maug during 2010 Mariana Expedition Wildlife Survey. Curtis Kessler, USFWS

The highest levels of live coral cover occur west of West Island at depths of 40 to 82 feet (12 to 25 meters) with a range of 30% to 75% cover. This area is characterized by high relief spur-and-groove habitat, interspersed with canyons and walls that consistently supported low cover of macroalgae compared to other areas surveyed in the Mariana Archipelago. A submerged coral limestone terrace was observed 82 feet (25 meters) below sea level off West Island. COTS and stressed-coral cover were not observed in this area.

The exposures south of West and East Islands had consistently low cover of live hard corals compared to other areas surveyed around Maug. These habitats were dominated by boulders and supported 75% to100% macroalgal cover in some locations, which is high relative to other areas surveyed around Maug. The complexity of these habitats generally was slightly lower than the complexity observed at other survey areas around Maug.

Volcanic eruptions have not been recorded for Maug and recent USGS over flights have not observed geothermal activity above the ocean surface. However, NOAA expeditions have discovered hydrothermal venting on the dacite dome in the center of the caldera releases CO_2 bubbles, which creates more acidic waters in the immediate vicinity of the vents - measuring a pH of 6.07 near the vents, versus a pH of 8.13 for the surrounding region.

Water temperatures at the vent site were 60 to 93 degrees Fahrenheit (°F) (16 to 34° Celsius) above the surrounding subsurface water temperatures. The seafloor surrounding the vents was littered with boulders and rubble, presumably from previous landslides, with every surface covered by a layer of brown, orange and yellow-tinted “fluffy” silt. Although no corals grow in the immediate vent area, NOAA documented live coral cover nearby ranging from 67 to 100 percent, making this one of the few known examples of natural ocean acidification within a coral reef ecosystem. Many areas were dominated by the genus *Goniastrea*, which grows on steep



Vents release gas bubbles and warm water west of East Island. The seafloor is covered by fluffy orange silt. Ellen Smith, NOAA

walls and provides a framework for other corals and invertebrates. Also numerically abundant were the genera *Porites* and *Astreopora*. As ocean acidification increases across the Earth, this caldera offers scientists an opportunity to study today, conditions that may occur in the future.

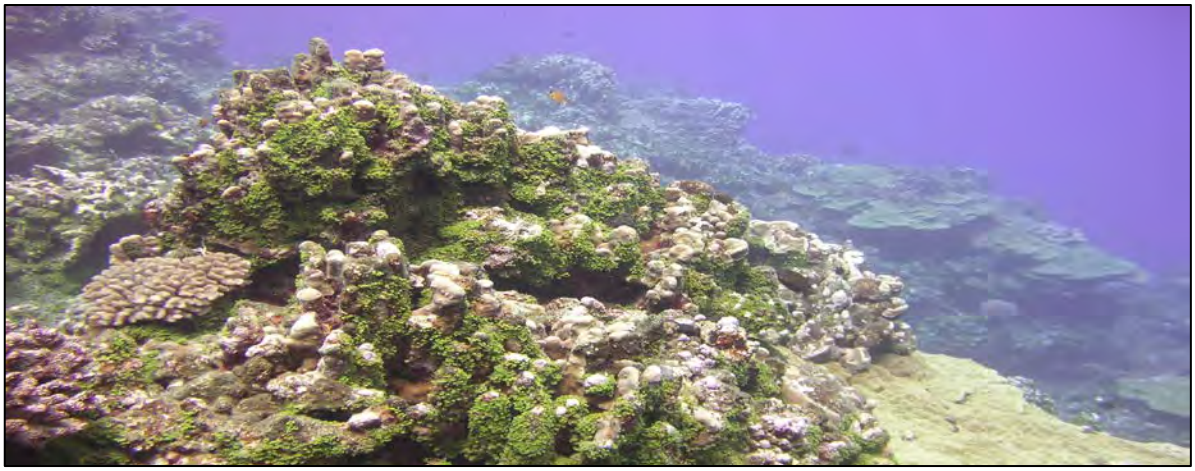
Two bird species of conservation concern breed on Maug: the Micronesian megapode (*Megapodius laperouse*), which is listed federally as Endangered (USFW 1970) and locally as threatened or endangered (Berger et al. 2005); and the near-threatened (BirdLife International 2008) white-throated ground-dove (*Gallicolumba xanthonura*). These terrestrial species are not known to use the marine environment.

In 2013, a distressed Japanese vessel grounded inside the caldera on West Island and broke apart. The majority of submerged debris has since dispersed, but the shorelines remain covered by a variety of debris.

Marine debris at Maug. NOAA

3.4.3 ASUNCION

Asuncion is the third northernmost island in the Northern Mariana Islands chain, located approximately 25 miles (40 km) southeast of Maug. It is located at latitude 19° 41' N, longitude 145° 14' E, and is approximately 300 miles (490 km) north of Saipan. It is a massive stratovolcano which rises from the ocean floor to a height of 2,812 feet (857 meters) above sea level. It is approximately 2.3 miles (3.7 km) long, 2.1 miles (3.3. km) wide, and has an area of 2.8 miles^2 (7.3 km^2). The island has steep cliffs on the northeastern side and gentler slopes on the southwestern side. Erosion and landslides have carved sea cliffs along the north and east coasts. Asuncion's steep flanks continue into the ocean to depths of approximately 7,550 feet (2,300 meters). Below sea level, there are several terraces, broken with ridges and channels. Asuncion and Maug are connected by a deep, underwater plateau.



Reef habitat on the west side of Asuncion. Robert Schroeder, NOAA

The steepest slopes and highest sea cliffs, as well as the steepest submarine topography, occur on the northern and eastern sides of this island. The steep benthic habitat is characterized by rocky reef strewn with boulders that support little cover of macroalgae or live hard corals. Areas off the southern and southwestern coasts are characterized by less dramatic topside and benthic topography, resulting in a biological seascape that is very different from the rest of Asuncion. The southern side of the island is subject to frequent landslides which carry substantial amounts of sediment and rock into the nearshore environment. Shelves occurring on the southern side of Asuncion are largely composed of sand and boulders, resulting in an environment of medium-low to medium complexity that supports less than 10% coral cover.

The west side of Asuncion is marked by several ash deposits along the moderately steep slope and by a shallow terrace that extends out from the shore to below the surface. Sheltered from the prevailing weather patterns, this nearshore habitat provides prime reef-building conditions. High levels of live coral cover were recorded in this area relative to other areas surveyed around Asuncion. The reefs along the west coast also supported the highest coral-colony densities, the highest crustose-coralline-red-algal cover, and the greatest macroalgal diversity at Asuncion. The west side supported the greatest abundance of sea cucumbers, COTS, and giant clams.

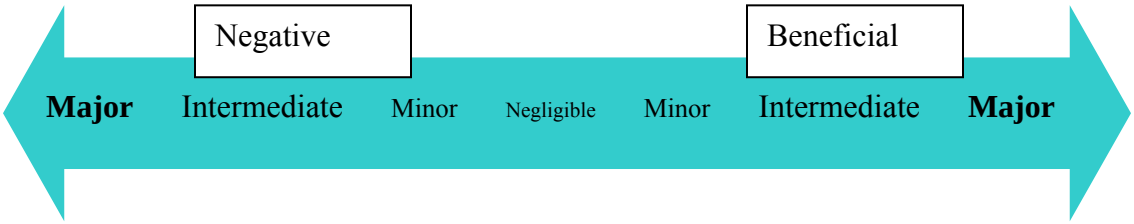
In the absence of any known fishing pressure, the waters surrounding Asuncion support abundant stocks of reef fishes compared to other islands of the Mariana Archipelago. Large-fish biomass was the second-highest level observed among the islands after Farallon de Pajaros. Total fish biomass was the highest estimated for the Archipelago, and fish assemblages included a broad range of herbivorous and piscivorous species. High numbers of sharks were seen at Asuncion compared to observations at other islands of the Mariana Archipelago.

Off the south coast of Asuncion, a dense aggregation of sea pens (order: Pennatulacea) were found at depths of 230 to 400 feet (70 to 120 meters) extending over a distance of approximately 1 mile (1.6 km). The aggregation occurred on a soft substrate, possibly composed of basaltic sand. High numbers of sea pens have not been observed around other islands of the Mariana Archipelago. Similar extensive nighttime surveying in the Hawaiian Archipelago and American Samoa has not revealed similar aggregations of sea pens, making this occurrence at Asuncion an uncommon, if not unique occurrence.

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

In this section the environmental consequences of implementing the alternatives are analyzed. The Affected Environment section describes the current conditions of the NISL (i.e., the environmental baseline) against which the effects of the proposed actions are compared. The analysis examines how the environmental baseline would change under the two alternatives.

To assist in analyzing the effects of implementing the proposed alternatives, the Council on Environmental Quality provides guidance on the context and intensity of potential effects (40 CFR, Section 1508.27). Based on this guidance, the qualitative terms major (significant), intermediate (moderate), minor, and negligible are used to describe the magnitude of the effect. To interpret these terms, intermediate is a higher magnitude than minor, which is of a higher magnitude than negligible. The word negligible is used to describe an effect that, when compared against the environmental baseline, would not be measurable or would be difficult to measure.



The terms below were used to describe the scope, scale, and intensity of effects on natural, cultural, social (including recreational), and economic resources.

- **Negligible or Neutral.** Resources would not be affected (neutral effect), or the effects would be at or near the lowest level of detection (negligible effect). Resource conditions would not change or would be so slight there would not be any measurable or perceptible consequence to benthic characteristics, marine life, or cultural resources.

- **Minor.** Effects would be detectable, but localized, small, and of little consequence to benthic characteristics, marine life, or cultural resources. Mitigation, if needed to offset adverse effects, would be easily implemented and successful based on knowledge and experience.

- **Intermediate or Moderate.** Effects would be readily detectable and localized with measurable consequences to benthic characteristics, marine life, or cultural resources but not readily detectable or measurable beyond the NISL. Mitigation measures would likely be needed to offset adverse effects, and could be extensive, moderately complicated to implement, and probably successful based on knowledge and experience.

- **Major or Significant.** Region-wide effects would be obvious and would result in substantial consequences to benthic characteristics, marine life, or cultural resources. Extensive mitigating measures may be needed to offset adverse effects and would be large-scale in nature, possibly complicated to implement, and may not have a high

probability for success. In some instances, major effects would include the irretrievable loss of the resource.

4.1 ALTERNATIVE 1: CURRENT LAND STATUS ALTERNATIVE (NO ACTION)

Under Alternative 1, the Current Land Status Alternative, the United States would not convey the NISL to CNMI and would continue to exercise ownership and control of the NISL.

The NISL would continue to be managed as part of the Islands Unit of the MTMNM and actions permitted to take place within the NISL would be for the long-term protection and maintenance of the marine environment (the environmental baseline). Commercial fishing and other resource extraction such as offshore oil and gas exploration and extraction, and trade in coral and live reef fish would continue to be banned by PP 8335 which prohibits the appropriation, injury, destruction, or removal of any feature of the MTMNM except as provided for PP 8335, or as otherwise provided for by law.

Under Alternative 1, the multi-year, multi-agency planning process to develop the MMP would continue. As stated in PP 8335, the Secretaries are required to complete an MMP to provide for the care and management of the Monument's resources. The USFWS and NOAA would continue to work together with the Secretary of Defense, the U.S. Coast Guard, and the CNMI Government in development of the MMP.

The draft MMP outlines the following goals for management of the MTMNM, including the NISL:

1. Conserve and protect the marine ecosystems around the islands of Farallon de Pajaros (Uracus), Maug, and Asuncion; 21 of the Mariana Ridge undersea volcanoes and thermal vents; and the geologic features and life forms in the Mariana Trench.
2. Provide for traditional access by indigenous persons for culturally significant subsistence, cultural and religious uses.
3. Develop education, interpretation, and outreach programs to enhance understanding and appreciation of Monument resources and efforts to conserve them.
4. Assess and promote scientific exploration and research opportunities and adopt measures to ensure that the Monument's ecosystem, marine resources or species, and features of scientific interest are not degraded.
5. Assess and promote Monument-related opportunities for tourism, recreation, and economic activities and opportunities in the CNMI.
6. Contribute to the recovery and protection of all native species with special consideration for threatened and endangered species, and species of management concern.

These goals speak to the desire to manage the MTMNM, including the NISL, for the permanent conservation and protection of the current conditions of the geologic features and marine ecosystem.

Scientific research would continue to be evaluated and permitted on a case-by-case basis. Such activities may require vessels, ships, or remotely operated vehicles to enter into the area of the NISL which could result in the discharge of materials into the air and water, including anchoring of vessels, resulting in a negligible effect to these resources.

Under the No Action alternative, NOAA and USFWS would continue their management of the Islands Unit. Access to the Islands Unit has been documented at 3.8 trips per year for all types of activities from 1979-2010, including scientific research (Kotowicz and Richmond 2013). This trend is expected to increase slightly with increased interest in conducting scientific exploration and research for climate change and ocean acidification in the Maug cauldron and the Islands Unit. However, the fishery and benthic resources extracted during these activities represent a negligible fraction of the available biomass in the Islands Unit.

As part of the current Monument Management Planning process, DOI and DOC are developing regulations to require permits to access the Monument, including the submerged lands, and to require permittees to take appropriate measures to minimize potential adverse effects such as marine invasive species introductions or coral reef damage from boat anchors. To prevent these impacts, access requests to the Monument for fishing, exploration and research, or cultural purposes would be reviewed by the Monument managers through a permit process. Any permits issued would require permittees to implement Monument best management practices (BMPs) and any additional conservation measures required under ESA, MMPA, MSA, or NHPA to minimize effects to the resources in the Islands Unit. Such regulations and permit measures enable DOI and DOC to also monitor and regularly assess the approved activities.

Commercial fishing would continue to be prohibited in the NISL. Under regulations at 50 CFR Part 665, noncommercial and recreational charter fishing in the NISL would continue to be permitted on a case-by-case basis by NMFS. NMFS issues permits only to a community resident of Guam or the CNMI, or a charter business established legally under the laws of Guam or the CNMI. Vessel operators are required to maintain a log sheet for each day of fishing and must submit the log to NMFS within 30 days of the end of each fishing trip. Noncommercial fishing may also result in the discharge of materials into the air and water, but given the extremely low level of fishing activity in the action area, negligible effects to these resources are anticipated.

Under the No Action Alternative, fishermen who harvest fishery resources under a noncommercial fishing permit would continue to engage in customary exchange which helps to preserve traditional, indigenous, and cultural fishing practices, on a sustainable basis. Customary exchange means the non-market exchange of marine resources between fishermen and community residents, for goods and/or services for cultural, social, or religious reasons. Customary exchange may include cost recovery through monetary reimbursements and other means for actual trip expenses, including but not limited to ice, bait, fuel, or food, that may be necessary to participate in the fisheries in the NISL. Customary exchange by fishermen fishing under a recreational charter permit is not allowed.

NMFS estimates that up to 10 vessels total, fish in the Monument annually; and this is considered a high estimate because of the distance from populated areas, the costs of trips, and because the prohibition on fishing commercially outside the Monument on the same trip as a Monument noncommercial fishing trip discourages fishermen from seeking a Monument fishing permit. Noncommercial fishing activity in the Monument could involve troll fishing using hooks and line, bottom fishing using hook and line gear, and hand harvests of spiny lobster. A low level of coral reef ecosystem fishing using spears or pole and line gear cast from shore could target coral reef fishes. Under the no-action alternative, there would continue to be the same amount of commercial pelagic, bottomfish, crustacean, and coral reef fishing in areas just outside of the

Monument. Current impacts to pelagic, bottomfish, crustacean and coral reef ecosystem target and non-target stocks are considered sustainable. Bottomfish, crustacean and coral reef ecosystem harvests outside the Monument are subject to annual catch limits and accountability measures to help ensure the sustainability of these fisheries.

There are no reports of interactions between seabirds and commercial and noncommercial fisheries around the CNMI and Guam. Under the No Action alternative, there would be no change to the gear used, the areas fished, or for other requirements that affect noncommercial fishing in the Monument. Therefore, seabirds would not be affected by the No Action alternative. Similarly, the commercial and noncommercial fisheries around the CNMI are operating in accordance with ESA Section 7 Biological Opinions and MMPA Letters of Authorization that apply to the existing pelagic, bottomfish, coral reef, and crustacean fisheries. There would be no change to the number, type, or severity of interactions with sea turtles, or marine mammals under the no-action alternative. Accordingly, no significant impacts to protected species are anticipated.

While there is the potential for illegal, unreported, or unregulated fishing activities in the transfer area, the degree of these actions is suspected to be infrequent due to the distances and costs involved in accessing the Northern Islands. Under both alternatives, NOAA Office of Law Enforcement (OLE), USFWS OLE and CNMI Division of Fish and Wildlife personnel would work in collaboration with the USCG to ensure compliance with applicable laws and respond to incidents such as illegal fishing and the ecological impacts that may occur in the NISL waters. Permitted research, noncommercial fishing, and other management actions would effectively maintain the environmental baseline. Thus adopting Alternative 1, would be expected to result in neutral or negligible effects to the NISL. Resources would either not be affected (neutral effect), or the effects would be at or near the lowest level of detection (negligible effect). Adopting Alternative 1 would not result in obvious region-wide effects that result in substantial consequences to the marine environment including marine mammals, listed species, coral, or other marine resources. Nor would it result in substantial consequences to the social or economic environment. No significant effects would occur.

4.2 ALTERNATIVE 2 – NORTHERN ISLANDS SUBMERGED LANDS CONVEYANCE (PREFERRED ALTERNATIVE)

Under Alternative 2, the NISL Conveyance Alternative, the DOI, DOC, and CNMI would enter into the MOA and DOI would convey ownership of the NISL to the government of CNMI via a patent with a reserved easement. CNMI as owner and under the MOA would have primary responsibility for managing resources within the NISL in accordance with PP 8335, including general permitting of scientific research and noncommercial fishing within the transfer area as well as managing traditional access by indigenous persons for culturally significant subsistence, cultural, and religious uses. This change may be expected to result in decision-making that is more responsive to the unique cultural and social needs of local communities in the Marianas.

Under the MOA, management of the NISL would be governed by the terms of PP 8335 and the terms of the reserved easement which are incorporated into the patent. Federal agency actions in the NISL would be determined by the interest the U.S. government retained in the easement, those rights, powers of regulation, and servitudes reserved under the TSLA, all powers of

regulation and control under applicable federal authorities, and the provisions of the MOA. The purpose of the MOA and the reserved easement are to ensure future management of the NISL is in accordance with the provisions of PP 8335 and PP 9077, including during the interim period following conveyance and prior to adoption of the CSLMP. Submerged lands so granted by the U.S. to CNMI would remain part of the MTMNM unless Federal conservation status is withdrawn by an Act of Congress.

Under Alternative 2, and at the request of the CNMI Government, the NISL would continue to be managed under the present management roles and responsibilities until such time the CNMI government, at its discretion, assumes all or a portion of the management responsibilities of the NISL. During this interim period, USFWS and NOAA would continue to consult with the CNMI Government on management of the conveyed submerged lands. This interim management scenario plan would effectively maintain current management of the NISL resulting in negligible or neutral effects to the marine, social, and economic environments.

Upon assuming management responsibilities under the terms of the MOA and of the reserved easement, CNMI would be required to manage the NISL consistent with PP 8335 including not allowing or permitting any appropriation, injury, destruction, or removal of any feature of the Monument except as provided for by PP 8335 or as otherwise provided for by law. In establishing the Monument, PP 8335 noted that "*it is in the public interest to preserve the known volcanic areas of the Mariana Ridge, the marine environment around the islands of Farallon de Pajaros, Maug, and Asuncion in the Commonwealth of the Northern Mariana Islands, and the Mariana Trench for the care and management of the scientific objects therein*."

The two actions included under the proposed action (the MOA and the patent with a reserved easement) would ensure that the NISL are managed consistent with the requirements of PP 8335 and be forever managed and maintained for the protection of the resources contained therein unless Monument or other federal conservation status is withdrawn by an Act of Congress. Accordingly, upon the Government of CNMI assuming management responsibilities for the NISL, Alternative 2 would also effectively maintain the environmental baseline as the NISL would be managed consistent with PP 8335, without physical changes to the environment, ensuring the long-term care and preservation of the NISL. In particular, under Alternative 2, impacts to target and non-target pelagic, bottomfish, coral reef, and crustacean species are expected to remain low.

As discussed above in section 4.1, current demand for noncommercial fishing permits in the Monument is negligible, most likely because of the significant distance from populated areas, and the costs involved (NMFS estimates the current average cost of a trip from Saipan to the Islands Unit to be from $5,350 to $6,400, which will vary in the future as fuel and other costs fluctuate). Although customary exchange of fish harvested by noncommercial fishermen in the Islands Unit of the MTMNM can occur, and could include cash reimbursements to help pay for the cost of trips, the prohibition on commercial fishing provides a strong disincentive for fishing trips to the Islands Unit. Because the prohibition on commercial fishing would continue, CNMI management of noncommercial fishing in the NISL under Alternative 2 is not expected to result in any measurable change in fishing practices over the existing baseline. Similarly, impacts to protected species would be expected to remain the same.

Similar to Alternative 1, to address potential illegal, unreported, or unregulated fishing activities in the transfer area under Alternative 2, NOAA OLE, USFWS OLE, and CNMI LE personnel would continue work in collaboration with the USCG to ensure compliance with applicable laws and respond to incidents such as illegal fishing and subsequent ecological impacts in the NISL waters. As the expected amount of illegal fishing would not be expected to change from status quo due to the costs and distances involved, Alternative 2 would result in neutral effects from illegal, unreported, or unregulated fishing or the response to such activities.

Because the conveyed NISL would continue to be managed in conformance with PP 8335 the proposed conveyance was found to have no effects on listed species or cultural resources that may occur in the NISL (see sections 5.2.2 and 5.2.3). Future management in conformance with PP 8335 would effectively maintain the environmental baseline and would be expected to result in neutral or negligible effects to the NISL. Resources would either not be affected (neutral effect), or the effects would be at or near the lowest level of detection (negligible effect).

Implementing Alternative 2 would not result in obvious region-wide effects that result in substantial consequences to the marine environment including marine mammals and reptiles, listed species, coral, or other marine resources. Nor would it result in substantial consequences to the social or economic environment. No significant effects would occur.

4.3 CUMULATIVE EFFECTS

Cumulative effects result from the incremental effects of a project when added to other past, present, and reasonably foreseeable future projects in the area. Cumulative effects can result from individually minor but cumulatively significant actions over a period of time.

The CEQ (40 CFR § 1508.7) (CEQ 1997) provides the following definition of cumulative effects: “The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

The proposed action will not introduce cumulative impacts because it merely conveys title to the land without changing its conservation status, that is, under either alternative analyzed in this EA, the character of the land remains undisturbed and preserved in its natural state, thereby introducing no cumulative impacts on the resources affected.

CHAPTER 5. COORDINATION, CONSULTATION, AND COMPLIANCE

5.1 PUBLIC INVOLVEMENT

To inform the public of this proposed action and to provide information about now CNMI, DOC, and DOI would coordinate management of the NISL, the Service engaged in a multi-faceted public involvement program. The Service briefed local and Federal elected officials with particular interest in the Monument, including Delegates Gregorio Sablan (CNMI) and Madeleine Bordallo (Guam), as well as Delegate Aumua Amata (American Samoa).

The Monument website was updated with timely and pertinent information on the Draft EA and MOA. Links to the Draft EA and MOA were posted so the public can view and download them in PDF format. A link to the free Adobe Acrobat Reader is maintained, for viewing the Portable Document Format (PDF).

A Notice of Availability and request for comments was published in the Federal Register. A news release announcing the availability of the Draft EA and Draft MOA for public review and comment was published in the Saipan Tribune, Pacific Daily News, and the Honolulu Star Advertiser. The news release was also posted on the Monument website (http://www.fws.gov/refuge/Mariana_Trench_Marine_National_Monument/).

As part of the public notice and review process, the Draft EA is available for a 30-day review.

Comments or requests for additional information may be submitted through any of the following methods.

- Email: fw1_sltransfer_cnmi@fws.gov. Include “Submerged Lands Transfer” in the subject line of the message.
- Fax: Attn: Charles Houghten, (503) 231-6161.
- U.S. Mail: U.S. Fish and Wildlife Service, Pacific Region, Attn: Charles Houghten, Chief, Lands Division, 911 NE 11th Ave., Portland, OR 97232-4181.

Commenters should be aware that entire comments—including personal identifying information such as address, phone number, or email address may be made publicly available at any time. While commenters may request that personal identifying information be withheld from public review, the Service cannot guarantee that we will be able to do so.

5.2 ENVIRONMENTAL REVIEW AND CONSULTATION

The conveyance of submerged lands to the CNMI would comply with Federal laws, regulations, and Executive orders. The following section describes specifically how the conveyance would be in compliance with the National Environmental Policy Act (NEPA), National Historic Preservation Act (NPHA), Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), and other relevant Federal laws, regulations, and Executive Orders.

5.2.1 NATIONAL ENVIRONMENTAL POLICY ACT

As a Federal agency, USFWS must comply with provisions of NEPA, as amended (42 U.S.C. 4321-4347). An environmental analysis is required under NEPA to evaluate reasonable alternatives that will meet stated objectives and to assess the possible environmental, social, and economic impacts to the human environment. The Environmental Assessment (EA) serves as the basis for determining whether implementation of the proposed action would constitute a major Federal action significantly affecting the quality of the human environment. The EA facilitates the involvement of government agencies and the public in the decision-making process.

5.2.2 NATIONAL HISTORIC PRESERVATION ACT

Section 106 of the National Historic Preservation Act of 1966 (NHPA) (16 U.S.C. 469) requires Federal agencies to take into account the effects of their undertakings on historic properties. This includes complying with the NHPA and other cultural resource preservation laws, and consulting with the State Historic Preservation Office and appropriate Native American governments and Native Hawaiian organizations, if applicable, over any future management actions which may have the potential to affect historic properties.

Pursuant to Section 106 of the NHPA and promulgated regulations, the DOI has determined the conveyance to be an undertaking (36 CFR 800.3(a)). The USFWS has determined that this undertaking is of the type that has no potential to cause effects on historic properties.

DOI recognizes the CNMI Government enacted law, the Commonwealth Historic Preservation Act of 1982 (Public Law 3-39), to provide protection for historic properties comparable to Section 106 of the NHPA. As such USFWS determined that the conveyance of the NISL to the CNMI Government is an undertaking with no potential to cause effects (36 CFR 800.3(a)).

5.2.3 ENDANGERED SPECIES ACT

The Endangered Species Act (ESA) directs all Federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the ESA. Section 7 of the ESA is the mechanism by which Federal agencies ensure their actions do not jeopardize the existence of any listed species. Under Section 7, Federal agencies must consult with USFWS or NMFS when any action an agency carries out, funds, or authorizes may affect a listed Endangered or Threatened species. NOAA has jurisdiction over marine mammals, fish, invertebrates, and plants. The USFWS and NOAA share jurisdiction for sea turtles, with NOAA taking the lead for the marine environment and USFWS taking the lead for upland breeding grounds.

USFWS and NOAA initiated an ESA Section 7 consultation on the proposed action. The consultation concluded the proposed conveyance of the NISL would have no effect on listed species because the NISL will continue to be managed for the protection of the natural resources contained therein, consistent with PP 8335. The Section 7 consultation findings are attached as Appendix B.

5.2.4 MARINE MAMMAL PROTECTION ACT

The Marine Mammal Protection Act (MMPA), which is administered by NOAA Fisheries, prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. Current fisheries are classified by the level of serious injury and mortality of marine mammal stocks that occur incidental to each fishery. Depending upon the level of interactions for each commercial fishery, as published in the List of Fisheries and Stock Assessment Reports, certain permits, authorizations, and take reduction requirements may apply. Under both alternatives, scientific research that results in incidental or directed take of marine mammals will be subject to review and authorization under MMPA sections 101(a)(5) and 104, as appropriate. Because no commercial fisheries are authorized within the Islands Unit, the proposed action will not introduce impacts to marine mammals that require such authorization under MMPA.

5.2.5 COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 U.S.C. 9601 et seq.) requires Federal agencies to evaluate the environmental condition of property and to take remedial actions as necessary to protect human health and the environment before transferring property. Section 120(h) of CERCLA establishes the regulatory process. Pursuant to Section 120(h) of CERLA, USFWS conducted an Environmental Baseline Study (EBS) of the NISL (Appendix E).

Based on the information gathered in the EBS and the American Society for Testing and Materials (ASTM) Standards (ASTM D5746-98(2010) Standard Classification of Environmental Condition of Property (ECOP) Area Types), the USFWS categorized all three potential transfer sites as Area Type 3 or areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action. No hazardous substances are known within the NISL, thereby warranting an Area Type 2 designation, or areas where only release or disposal of petroleum products has occurred. However, the unknown circumstances of marine debris and the remote location leaves open the possibility that hazardous materials may have migrated into the NISL at one time. There are no concentrations of hazardous materials at this time that have or do require removal or remedial action, so an Area Type 4 designation is not warranted.

Based on this finding, the Service further concludes that the NISL are suitable to transfer to the CNMI. This notice of identification of Area Type and suitability for transfer is intended to fulfill the public disclosure requirement of Section 120(h).

5.2.6 COASTAL ZONE MANAGEMENT ACT

The USFWS in coordination with NOAA and CNMI determined that this rule will be implemented in a manner that is consistent, to the maximum extent practicable, with the enforceable policies of the approved coastal management programs of CNMI Coastal Zone Management Act (CZMA) programs. The USFWS has also determined that there are no

reasonably foreseeable effects to the uses or resources of CNMI's coastal zone. Therefore, pursuant to NOAA's CZMA regulations, neither a consistency determination nor a negative determination is needed for this action.

5.2.7 ESSENTIAL FISH HABITAT

This action will have no Adverse Impact on Essential Fish Habitat (EFH). The submerged land affected by this action is designated as EFH and supports various life stages for the management unit species (MUS) identified under the Western Pacific Regional Fishery Management Council's Pelagic and Marianas Archipelago Fishery Ecosystem Plans (FEPs). The MUS and life stages that may be found in these areas include: eggs, larvae, juveniles and adults of Coral Reef Ecosystem MUS (CRE-MUS); eggs, larvae, juveniles and adults of Bottomfish MUS (BMUS); and eggs, larvae, juveniles and adults of Crustacean MUS (CMUS). In the context of the fishery as a whole, this final action will not have an adverse impact on EFH; therefore, an EFH consultation is not required. This action is administrative and therefore, this action will have no adverse impact on any areas identified as EFH for U.S. fisheries.

5.2.8 OTHER FEDERAL LAWS, REGULATIONS, AND EXECUTIVE ORDERS

In implementing the proposed action, USFWS would comply with the following Federal laws, Executive orders, and legislative acts: Intergovernmental Review of Federal Programs (Executive Order 12372); Protection of Historical, Archaeological, and Scientific Properties (Executive Order 11593); Floodplain Management (Executive Order 11988); Protection of Wetlands (Executive Order 11990); Departmental Policy on Environmental Justice (Executive Order 3127); and Consultation and Coordination with Indian Tribal Governments (Executive Order 13175).

5.3 DISTRIBUTION AND AVAILABILITY

The Draft EA can be viewed and downloaded from the Monument website. Printed copies of the Draft EA are available at the Joeten-Kiyu Public Library, Insåtto Street, Susupe, Sa'ipan, MP, 96950-1092; the Tini'an Municipal Public Library, Riverside Drive, Tinian, MP 96952; and the Antonio Camacho Atalig Memorial Library, Rota Northern Marianas Campus, Tatachog Village, Rota, MP.

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APPENDIX A. DRAFT MEMORANDUM OF AGREEMENT

This Memorandum of Agreement ("MOA") is entered into by and between the Commonwealth of the Northern Mariana Islands ("the CNMI" or "Commonwealth") Government, the United States Department of Commerce, and the United States Department of the Interior, to establish an agreement for the coordination of management, consistent with Proclamations 8335 and 9077, of submerged lands located adjacent to the islands of Farallon de Pajaros, Maug, and Asuncion, that the United States intends to convey to the CNMI Government.

RECITALS

WHEREAS, on January 6, 2009, Proclamation 8335 established the Marianas Trench Marine National Monument (Monument) (Figures 1-5) for the purpose of protecting the submerged volcanic areas of the Mariana Ridge; the marine environment around the islands of Farallon de Pajaros (Uracas), Maug, and Asuncion in the CNMI; and the Mariana Trench; and

WHEREAS, Proclamation 8335 sets forth the purposes and management regime for the Monument, and restricts and prohibits certain activities in the Monument; and

WHEREAS, Proclamation 8335 directs the Secretary of Commerce, through the National Oceanic and Atmospheric Administration (NOAA), and the Secretary of the Interior, to manage the Monument pursuant to applicable legal authorities and in consultation with the Secretary of Defense; and

WHEREAS, on January 16, 2009, the Secretary of the Interior issued Secretary's Order No. 3284, which delegates management authority for the Monument to the U.S. Fish and Wildlife Service (USFWS); and

WHEREAS, Proclamation 8335 directs the Secretaries of Commerce and the Interior to prepare management plans for the proper care and management of the objects identified in the Proclamation and to treat the CNMI Government as a cooperating agency; and

WHEREAS, on September 18, 2013, by Public Law 113-34, Congress enacted an amendment to Public Law 93-435, the Territorial Submerged Lands Act of 1974, as amended (referred to hereafter as "TSLA"), to convey to the CNMI Government certain submerged lands and associated mineral rights permanently or periodically covered by tidal waters up to but not above the line of mean high tide, located seaward to a line three geographical miles distant from the coastlines of the CNMI; and

WHEREAS, on January 15, 2014, pursuant to section 1(b)(vii) of the TSLA, Proclamation 9077 excepted from the conveyance certain submerged lands adjacent to the islands of Farallon de Pajaros, Maug, and Asuncion (the "Northern Islands Submerged Lands"); and

WHEREAS, on January 16, 2014, and March 13, 2014, respectively, the United States conveyed to the CNMI (1) by operation of law, the submerged lands identified in the Act and not excepted

by Proclamation 9077, and (2) by patent, the mineral rights associated with those submerged lands; and

WHEREAS, Proclamation 9077 also recognized the authority of the Secretary of the Interior under the TSLA to convey the excepted lands to CNMI when the Secretaries of Commerce and the Interior, and the CNMI Government entered into an MOA for coordination of management that ensures the protection of the Monument within the Northern Islands Submerged Lands; and

NOW, THEREFORE, in view of the above recitals, the Secretary of Commerce, the Secretary of the Interior, and the Governor of the CNMI (the "Signatories") enter into this MOA to establish the terms and conditions for the coordination of management of the Northern Islands Submerged Lands and subsequent to its execution, the United States will initiate the process to convey the Northern Islands Submerged Lands and associated mineral rights to the CNMI. This MOA shall be subject to the following terms and conditions.

I. Purpose, Scope, Authorities, and Guiding Principles

1.1 Purpose

Recognizing the commitment herein of the CNMI Government to manage the conveyed submerged lands consistent with the purposes and requirements of Proclamations 8335 and 9077, the purpose of this MOA is to provide a cooperative framework for the coordination of resource management to ensure the long-term, comprehensive conservation and protection of the Monument within the Northern Islands Submerged Lands. This MOA establishes functional relationships, processes, and general terms and conditions under which the Signatories will cooperate to effectively coordinate management of the Monument within the Northern Islands Submerged Lands.

1.2 Scope

The areas subject to this MOA are those within the boundary of the Northern Islands Submerged Lands—the submerged lands and associated waters adjacent to the islands of Farallon de Pajaros (Uracas), Maug, and Asuncion, identified in Proclamation 9077—which are part of the Islands Unit of the Monument (Figure 2). The boundaries of the Northern Islands Submerged Lands are contained in the attached Draft Patent (Exhibit A) and shown in the attached maps (Figures 3-5). The boundaries of the Monument are described in Proclamation 8335 and shown in Figure 1.

1.3 Authorities

The Signatories are authorized to enter into and implement this MOA under various authorities including the following:

Antiquities Act, 54 USC 320301 et seq*;*

The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America, 48 U.S.C. § 1801 note;

The Commonwealth Constitution, Articles III and XIV;

Coastal Zone Management Act, 16 U.S.C. § 1451, et seq.;

Coral Reef Conservation Act, 16 U.S.C. § 6401, et seq.;

Endangered Species Act, 16 U.S.C. § 1531 et seq.;

Fish and Wildlife Act, 16 U.S.C. § 742;

Fish and Wildlife Coordination Act, 16 U.S.C. § 661 et seq.;

Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §1801 et seq.;

Marine Mammal Protection Act, 16 U.S.C. § 1361, et seq.;

National Wildlife Refuge System Administration Act of 1966, as amended, 16 U.S.C. §§ 688dd-ee;

Proclamation 9077 (January 15, 2014), 79 Fed. Reg. 3479 (January 21, 2014);

Proclamation 8335 (January 6, 2009), 74 Fed. Reg. 1557 (January 12, 2009);

Refuge Recreation Act, 16 U.S.C. § 460k-3; and

Territorial Submerged Lands Act of 1974, as amended, 48 U.S.C. § 1705 et seq.

1.4 Guiding Principles

Upon conveyance by the United States of the Northern Islands Submerged Lands to the CNMI Government, the USFWS and NOAA agree to continue management responsibilities for the conveyed submerged lands, in consultation with the CNMI Government, until such time that the CNMI Government notifies in writing the other signatories of its intent to assume all or a portion of the management responsibilities of the conveyed submerged lands, and the effective date of such assumption. During this interim period, USFWS and NOAA will continue to consult with the CNMI Government on management of the conveyed submerged lands.

Upon assuming such management responsibilities, the CNMI Government agrees to manage the Northern Islands Submerged Lands, in coordination with NOAA and FWS, consistent with the purposes and requirements of Proclamations 8335 and 9077, the Commonwealth Constitution, other applicable laws, and provisions of the Patent, and , in a manner that:

A. Preserves and protects natural resources, including, but not limited to bird, wildlife, and plant species as required by Section 2 of Article XIV of the Commonwealth Constitution;

B. Recognizes that the Monument is a place of maritime cultural significance for the Chamorro and Carolinian residents with cultural connections throughout the Mariana Islands by managing, to the extent compatible with the conservation and management goals of Proclamation 8335, the Monument resources within the Northern Islands Submerged Lands in a manner that honors the unique heritage of the indigenous cultures;

C. Provides protections for resources when there is uncertainty regarding impacts of activities that are to be permitted in the Northern Islands Submerged Lands;

D. Prohibits the appropriation, injury, destruction, or removal of any Monument object or resource within the Northern Islands Submerged Lands area, except as may be allowed under Proclamation 8335;

E. Permits scientific exploration and research within the Monument in a manner consistent with Proclamation 8335;

F. Permits sustenance, recreational, and traditional indigenous fishing in a sustainable fashion consistent with Proclamation 8335 and applicable laws;

G. Prohibits commercial fishing and mineral extraction;

H. Adopts best practices for an adaptive management approach that incorporates conservation management strategies, scientific principles, and traditional ecological knowledge;

I. Considers scientific exploration, research advances, and technology to learn about and develop greater understanding of the Monument objects and resources;

J. Enhances public appreciation of the unique character and environment of the Monument, and promotes conservation management of these areas through outreach and education activities;

K. Establishes effective monitoring of and enforcement for permitted activities;

L. Allows for innocent passage in the Northern Islands Submerged Lands and does not otherwise restrict navigation, overflight, and other internationally recognized lawful uses of the sea; and

M. Maintains consistency with provisions of Proclamation 8335 regarding actions of the Armed Forces and international law and the provisions of Sec. 2 of the TSLA (48 U.S.C. 1706).

II. Management Officials

2.1 The Government of the Commonwealth of the Northern Mariana Islands

The CNMI Government's management functions under this MOA shall be carried out by designees from: (1) the Department of Land and Natural Resources; and (2) the Bureau of Environmental and Coastal Quality.

2.2 The U.S. Department of Commerce

The Department of Commerce's management functions under this MOA shall be carried out by a designee from NOAA's National Marine Fisheries Service, Pacific Islands Regional Office.

2.3 The U.S. Department of the Interior

The Department of the Interior's management functions under this MOA shall be carried out by a designee from the USFWS, Pacific Islands Refuges and Monuments Office.

2.4. Management Officials

The designees under sections 2.1, 2.2, and 2.3 shall be collectively referred to as the "Management Officials."

III. Coordination of Management

3.1 General Coordination of Management

A. The Signatories will coordinate management of the Northern Islands Submerged Lands in accordance with the Guiding Principles set forth in Section 1.4, applicable legal authorities, and this article. The Parties to this MOA agree to utilize their respective authorities to carry out the purposes and requirements of this MOA.

B. Management Officials will ensure that the jurisdictional responsibilities of each Signatory are respected and maintained, while endeavoring to (1) reduce duplication of effort; (2) streamline processes for public use and involvement when it is advantageous to the protection of Monument objects and resources and logistically feasible; and (3) capitalize upon the authorities, strengths, and capabilities of the Signatories' programs to further the conservation management of the Monument as directed by Proclamation 8335.

C. Each Management Official will endeavor to provide reasonable advance notice to the other Management Officials prior to conducting activities supporting Monument purposes in the Northern Islands Submerged Lands area. Nothing in this MOA shall be construed to alter, diminish, or enlarge any rights, powers of

regulation, or control over lands and navigable waters reserved to the United States by the Constitution or Federal law. To the maximum extent practicable, NOAA and USFWS will also provide the CNMI Government with reasonable notice and an opportunity to participate in all scientific research either agency conducts in the Northern Islands Submerged Lands area. At the conclusion of such research, Management Officials will share all data to the extent allowed by law.

D. As directed by Proclamation 8335, NOAA and USFWS shall prepare a Monument Management Plan (MMP) for the proper care and management of the objects identified in the Proclamation and invite the CNMI Government to participate as a cooperating agency in developing the plan.

3.2 Monument Management Plan ("MMP")

A. The Secretaries of Commerce and the Interior will incorporate into the MMP provisions for coordination of management in protecting the coral reef ecosystems and related marine, cultural and historic resources, and objects of historic or scientific interest of the Monument.

B. Consistent with Proclamation 8335, the MMP currently in preparation includes provisions addressing:
(1) Management of the Islands Unit, in consultation with the CNMI, including designation of specific roles and responsibilities and the means for consultations on management decisions as appropriate, consistent with the respective authorities of the CNMI Government and Secretaries of Commerce and the Interior;
(2) Public education and outreach programs about coral reef ecosystems and other Monument resources and species, and efforts to conserve them;
(3) Traditional access by indigenous persons for culturally significant subsistence, cultural and religious purposes;
(4) A program to assess and promote Monument-related scientific exploration and research, tourism, and recreational and economic activities and opportunities in the CNMI;
(5) A mechanism to permit recreational fishing as a sustainable activity consistent with the purposes, terms and objectives of Proclamation 8335, upon consideration of the best scientific information available; and
(6) Programs for monitoring and enforcement to ensure scientific exploration and research, tourism, and recreational and economic activities do not degrade Monument coral reef ecosystems or related marine resources and species, or diminish the Monument's natural character.

3.3 Dispute Resolution

The Management Officials shall cooperate with each other in good faith and make reasonable efforts to carry out the provisions of this MOA. The Management Officials agree to respect the authorities, jurisdictions, and views of the respective parties and to make all efforts to

keep an open mind when a dispute arises. If a dispute arises as to whether a proposed action is consistent with this MOA, Management Officials will first have an informal discussion of the matter with particular focus on the Guiding Principles of this MOA. If the Management Officials cannot reach a resolution, the following procedure shall apply.

A. The proponent of the proposed action shall prepare a written "opening statement" on the proposed action and provide a copy of the statement to the other Management Officials. The opening statement shall specifically address whether the proposed action is consistent with Proclamations 8335 and 9077, CNMI sovereignty, the MMP, the CSLMP, and any other relevant authority, laws and regulations; any relevant economic, cultural, historical, or recreational factors that will be affected by the proposed action; and the impact the proposed action may have on conservation efforts.

B. If Management Officials concur with the opening statement then the proponent may proceed with the proposed action.

C. If a Management Official does not concur with the opening statement or the proposed action in general, the official shall prepare a written "opposition statement" and provide a copy of it to the other Management Officials within 7 days of receipt of the opening statement. The opposition statement shall specifically address whether the proposed action is inconsistent with Proclamations 8335 or 9077, CNMI sovereignty, the MMP, the CSLMP, and any other relevant authority, laws and regulations; any relevant economic, cultural, historical, or recreational factors that would be affected by the proposed action; and the impact the proposed action may have on conservation efforts.

D. The Management Officials shall convene a special meeting within 7 days of receipt of the opposition statement(s) to discuss the proposed action. The Management Officials shall consider Proclamations 8335 and 9077 and any other relevant authority, laws and regulations, the MMP, and the CSLMP; the economic, cultural, historical, and recreational factors that will be affected by the proposed action; and the impact the proposed action may have on conservation efforts and furthering the goals and objectives of Proclamation 8335. If they cannot agree, the respective management officials will forward the dispute to the NOAA Administrator, Director of the U.S. Fish and Wildlife Service, and the Governor of CNMI. If these officials are unable to promptly reach a unanimous decision, the agencies will make their decisions, which will be the final agency action for purposes of the issue in dispute.

E. A Management Official or Signatory may call for a mutually agreed upon third party to be brought in at any stage of the dispute resolution process to help facilitate an agreement. The cost of mediation shall be shared equally between the Secretary of Commerce, the Secretary of the Interior, and the CNMI Government.

F. Nothing in this section or in this MOA in general, shall constitute authority for any proponent to undertake activities in the Northern Islands Submerged Lands that are inconsistent with Proclamations 8335 and 9077, any Patent issued by the Secretary of the Interior in furtherance of this MOA, or applicable law and regulations.

IV. Conveyance of Submerged Lands

4.1 Upon execution of this MOA, the United States will initiate the process provided under sections 1(b) and (c) of the TSLA to transfer the Northern Islands Submerged Lands (as described above) and associated mineral rights to the CNMI Government. The transfer shall be accomplished by the execution of a Patent, a draft version of which is attached hereto as Exhibit A.

V. Period of MOA, Modification, or Termination

5.1 Term

The MOA is effective when signed by all of the Signatories and shall remain in effect unless terminated under section 5.3.

5.2 Review and Modification

The Signatories may modify this MOA by written amendment with the concurrence of all Signatories. The Signatories shall review the MOA every 10 years and make amendments as needed to promote the conservation of the Northern Islands Submerged Lands, consistent with Proclamation 8335.

5.3 Termination

Any Party may terminate this MOA after providing 30-day advance written notice to the other Parties. Termination of this MOA shall not affect the enforcement of rights in, access to, or use of the Northern Islands Submerged Lands, including as provided in any Patent issued by the Secretary of the Interior pursuant to the TSLA.

VI. General Conditions

6.1 Consistent with Federal and CNMI Laws

A. Nothing in this MOA shall be construed to supersede or otherwise diminish authorities vested in the Signatories under applicable Federal laws or the laws of the CNMI Government. Any such conflicting term in this MOA shall be given no effect by the Signatories, but the remainder of the MOA shall remain in effect.

B. If a term is nullified due to conflict with law, the Signatories shall immediately review the MOA and determine whether action (including, but not limited to, an amendment) is necessary to address the nullification of the term.

6.2 No Financial Obligation

A. This MOA defines in general terms the basis on which the Signatories will cooperate, and as such, does not constitute a financial obligation or an authorization for particular expenditures. Expenditures of funds, human resources and technical expertise are intended to be provided by each signatory to the extent that their participation is authorized by law and resources are available.

B. Nothing in this MOA is intended to require the expenditure of funds in excess or advance of applicable appropriations. This MOA is not a fiscal or funds obligation document. Any activities involving reimbursement or contribution of funds between Signatories to the MOA will be handled in accordance with applicable laws, regulations, and procedures.

6.3 Counterparts

This MOA may be executed in any number of counterparts, each of which will be deemed an original, but all of which when taken together will constitute one and the same instrument. The signature page of any counterpart may be detached therefrom without impairing the legal effect of the signature(s) thereon, provided such signature page is attached to any other counterpart identical thereto except having additional signature pages executed by other parties to this MOA attached thereto.

VII. CNMI Legal Certification

I hereby certify that this agreement has been reviewed and approved as to form and legal capacity for the Commonwealth of the Northern Mariana Islands.

_____ _____

Edward Manibusan, Attorney General, Date

VIII. Co-signers

_____

Governor, Commonwealth of the Northern Mariana Islands

_____

Secretary, U.S. Department of Commerce

_____

Secretary, U.S. Department of the Interior

Attachments

Exhibit A. Proposed Patent

The United States of America

To all to whom these presents shall come, Greeting:

WHEREAS, the submerged lands surrounding the islands of Farallon de Pajaros (Uracas), Maug, and Asuncion in the Commonwealth of the Northern Mariana Islands ("CNMI"), which include lands permanently or periodically covered by tidal waters up to but not above the line of mean low tide and seaward to a line three geographical miles distant from the coastlines of each of these islands, which were included in the Marianas Trench Marine National Monument (the "Monument"), established by Presidential Proclamation 8335 of January 6, 2009, pursuant to Section 2 of the Antiquities Act of June 8, 1906 (now codified at 54 U.S.C. 320301): and

WHEREAS, the CNMI Constitution recognizes that the islands of Maug, Uracas, Asuncion, Guguan and other islands specified by law shall be maintained as uninhabited places and used only for the preservation and protection of natural resources, including but not limited to bird, wildlife and plant species; and

WHEREAS, pursuant to Public Law 93-435, as amended by Public Law 113-34 (taken together, the "Act"), "the submerged lands adjacent to the islands of Farallon de Pajaros (Uracas), Maug, and Asuncion permanently covered by tidal waters up to the mean low water line and extending three geographical miles seaward from the mean high tide line" (Excepted Lands) were excepted from conveyance to CNMI by Presidential Proclamation 9077 ("Proclamation"), of January 15, 2014, by virtue of the authority vested in the President of the United States by Section 1(b)(vii) of the Act;

WHEREAS, Proclamation 9077 included a provision allowing the Secretary of the Interior (the "Secretary") to subsequently transfer the Excepted Lands to CNMI under Section 1(b) of the Act, at such time as the Secretary, the Secretary of Commerce and the Government of CNMI have entered into an agreement for the coordination of management that ensures the protection of the Monument within the area to be conveyed (the "Agreement"), and that such Agreement has now been entered into;

NOW THEREFORE, KNOW YE, that the UNITED STATES, in consideration of the premises, and in conformity with said Acts and Presidential Proclamations, HAS GIVEN AND GRANTED, and by these presents DOES GIVE AND GRANT unto the Government of CNMI, the Excepted Lands; TO HAVE AND TO HOLD the same, together with all the rights, privileges, immunities, and appurtenances, of whatsoever nature, thereunto belonging, unto the same Government of CNMI, its successors and assigns, forever; and,

EXCEPTING AND RESERVING TO THE UNITED STATES:
An Easement in perpetuity for the United States to ensure that the Excepted Lands, and the resources associated with such lands and as set forth herein, herewith conveyed to the

Government of CNMI are forever managed and maintained for the protection of the Monument or other federal conservation status, unless such conservation status is withdrawn hereafter by an Act of Congress. The Grantor and Grantee (the "Parties") shall be bound by the terms of said Reserved Easement in that:

1. The Excepted Lands and associated natural resources shall be managed and maintained by the Government of CNMI consistent with the Monument or other federal conservation status of the adjacent federal submerged lands. In doing so, the Government of the CNMI shall not authorize or allow commercial fishing or development on such lands or in the navigable waters overlaying such lands.

2. Nothing in this Easement shall be construed to limit the rights (a) of the Government of CNMI to manage sustenance, recreational, and traditional indigenous fishing in such area as a sustainable activity; (b) of the Government of CNMI to conduct or to authorize third parties to undertake bona fide scientific research in such area; (c) of the Government of CNMI and the Departments of the Interior and Commerce for coordinated management as set forth in the Agreement or any successor to the Agreement then in effect; or (d) the reserved rights of the United States set forth in section 2 of the Act. In addition, nothing in this Easement shall be construed or applied to require the Government of CNMI to manage or maintain a more protective conservation regime with respect to the Excepted Lands and associated natural resources than that regime authorized by applicable federal law for the adjacent federal submerged lands and associated natural resources.

3. After advance notice to the Government of CNMI, persons duly authorized by the Secretary of the Interior or the Secretary of Commerce shall be allowed reasonable access to the area covered by this easement to ensure compliance with its terms.

4. If a dispute arises between the Parties concerning the interpretation or operation of this Reserved Easement, either Party may request mediation by providing the other Party with written notice of such request. Neither Party is obligated to enter mediation. Nevertheless, if the Parties mutually agree to enter mediation, the Parties shall attempt to agree upon a single mediator, and the cost of mediation shall be borne by the United States Government, subject to the availability of funds. Any efforts at mediation shall conclude within ninety (90) days after the written notice, unless the Parties mutually agree to extend the time period for the mediation.

5. The United States expressly reserves the right to enforce the provisions of this Reserved Easement in any court of competent jurisdiction.

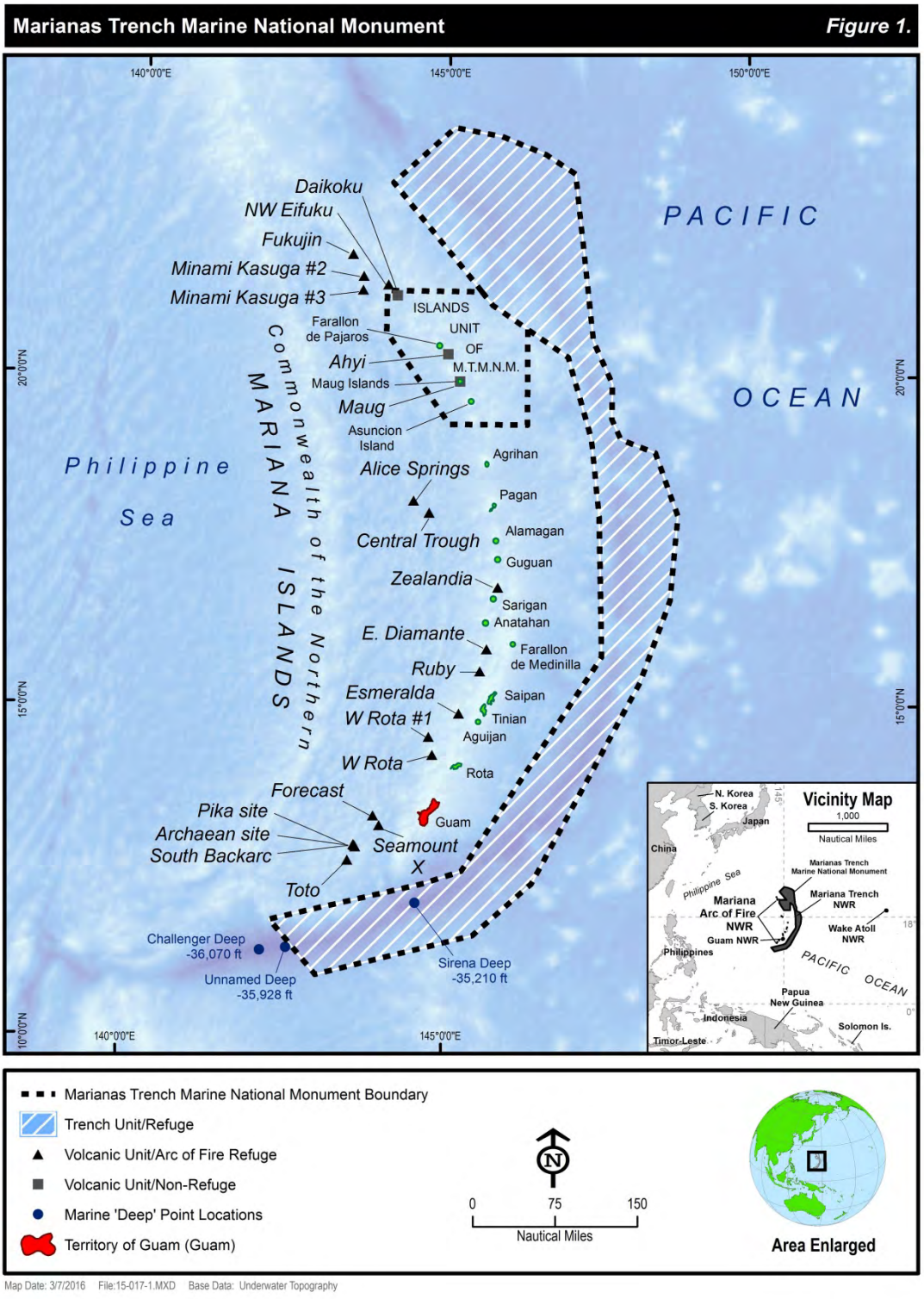
IN TESTIMONY WHEREOF, the undersigned authorized officer of ….

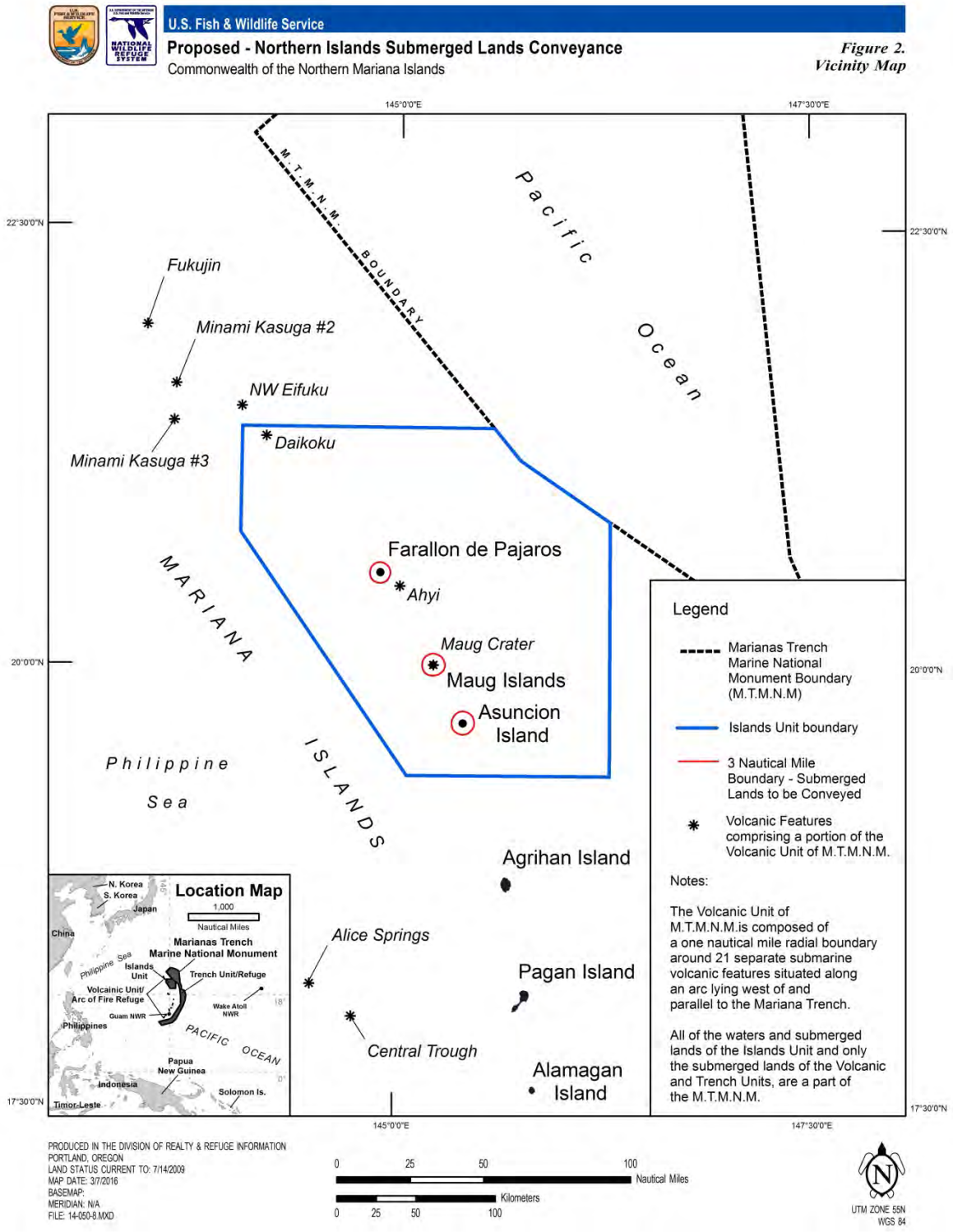
[Seal]

By_____

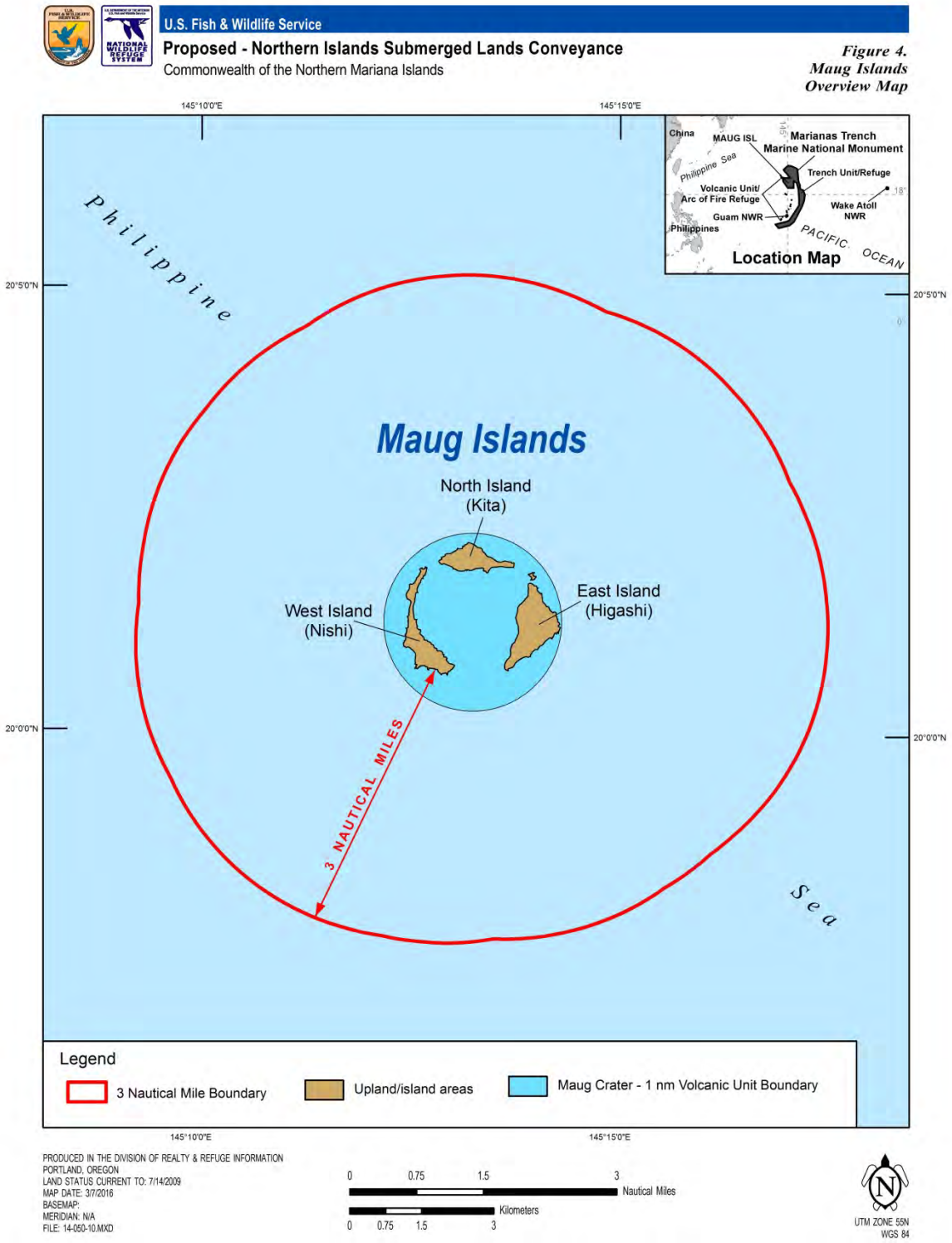
Patent Number _____

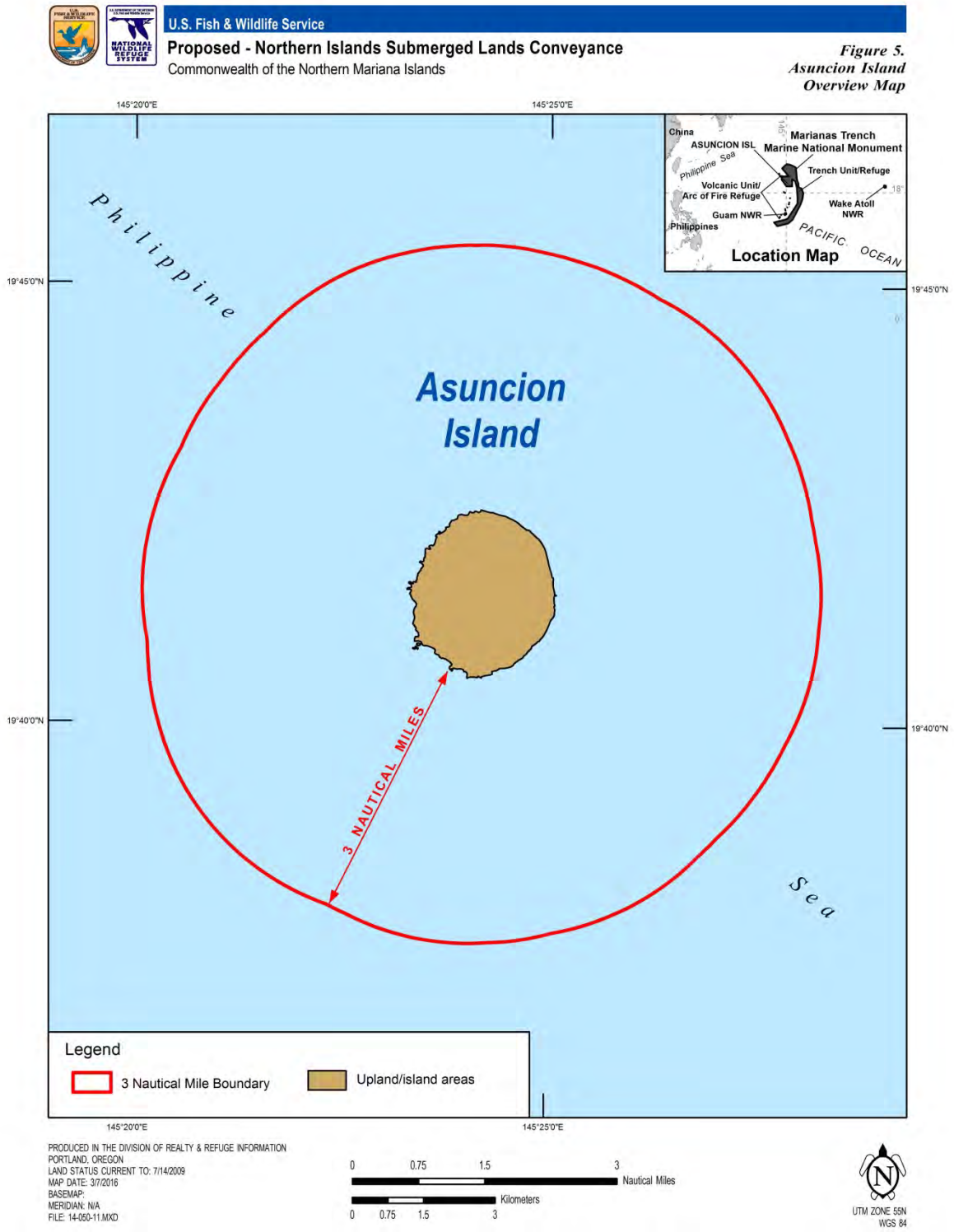
(BLOCK FOR ACCEPTANCE BY GOVERNOR AND DATES, TO BE INSERTED)


Marianas Trench Marine National Monument
Figure 1.
140°0'0"E
145°0'0"E
150°0'0"E
20°0'0"N
15°0'0"N
10°0'0"N
PACIFIC
OCEAN
Philippine
Sea
Commonwealth of the Northern
MARIANA
ISLANDS
ISLANDS
UNIT
OF
M.T.M.N.M.
Daikoku
NW Eifuku
Fukujin
Minami Kasuga #2
Minami Kasuga #3
Farallon
de Pajaros
Ahyi
Maug Islands
Maug
Asuncion
Island
Agrihan
Alice Springs
Pagan
Central Trough
Alamagan
Guguan
Zealandia
Sarigan
Anatahan
E. Diamante
Farallon
de Medinilla
Ruby
Esmeralda
Saipan
W Rota #1
Tinian
Aguijan
W Rota
Rota
Forecast
Pika site
Archaean site
South Backarc
Guam
Seamount
X
Toto
Challenger Deep
-36,070 ft
Unnamed Deep
-35,928 ft
Sirena Deep
-35,210 ft
Vicinity Map
1,000
Nautical Miles
N. Korea
S. Korea
Japan
China
Philippine Sea
Marianas Trench
Marine National Monument
Mariana Trench
NWR
Mariana
Arc of Fire
NWR
Guam NWR
Wake Atoll
NWR
Philippines
PACIFIC
OCEAN
Papua
New Guinea
Indonesia
Timor-Leste
Solomon Is.
Marianas Trench Marine National Monument Boundary
Trench Unit/Refuge
Volcanic Unit/Arc of Fire Refuge
Volcanic Unit/Non-Refuge
Marine 'Deep' Point Locations
Territory of Guam (Guam)
N
0
75
150
Nautical Miles
Area Enlarged
Map Date: 3/7/2016
File:15-017-1.MXD
Base Data: Underwater Topography


U.S. Fish & Wildlife Service
Proposed - Northern Islands Submerged Lands Conveyance
Commonwealth of the Northern Mariana Islands
Figure 2.
Vicinity Map
145°0'0"E
147°30'0"E
22°30'0"N
20°0'0"N
17°30'0"N
M.T.M.N.M. BOUNDARY
Pacific
Ocean
Fukujin
Minami Kasuga #2
NW Eifuku
Daikoku
Minami Kasuga #3
Farallon de Pajaros
Ahyi
Maug Crater
Maug Islands
Asuncion Island
MARIANA
ISLANDS
Philippine
Sea
Agrihan Island
Alice Springs
Pagan Island
Central Trough
Alamagan Island
Legend
Marianas Trench Marine National Monument Boundary (M.T.M.N.M)
Islands Unit boundary
3 Nautical Mile Boundary - Submerged Lands to be Conveyed
Volcanic Features comprising a portion of the Volcanic Unit of M.T.M.N.M.
Notes:
The Volcanic Unit of M.T.M.N.M.is composed of a one nautical mile radial boundary around 21 separate submarine volcanic features situated along an arc lying west of and parallel to the Mariana Trench.
All of the waters and submerged lands of the Islands Unit and only the submerged lands of the Volcanic and Trench Units, are a part of the M.T.M.N.M.
Location Map
1,000
Nautical Miles
N. Korea
S. Korea
Japan
China
Philippine Sea
Marianas Trench Marine National Monument
Islands Unit
Trench Unit/Refuge
Volcanic Unit/ Arc of Fire Refuge
Guam NWR
Wake Atoll NWR
Philippines
PACIFIC OCEAN
Papua New Guinea
Indonesia
Solomon Is.
Timor-Leste
PRODUCED IN THE DIVISION OF REALTY & REFUGE INFORMATION
PORTLAND, OREGON
LAND STATUS CURRENT TO: 7/14/2009
MAP DATE: 3/7/2016
BASEMAP:
MERIDIAN: N/A
FILE: 14-050-8.MXD
0 25 50 100 Nautical Miles
0 25 50 100 Kilometers
N
UTM ZONE 55N
WGS 84


U.S. Fish & Wildlife Service
Proposed - Northern Islands Submerged Lands Conveyance
Commonwealth of the Northern Mariana Islands
Figure 3.
Farallon de Pajaros
Overview Map
144°50'0"E
144°55'0"E
20°35'0"N
20°30'0"N
Philippine Sea
Farallon de Pajaros Island
3 NAUTICAL MILES
China
FARALLON DE PAJAROS
Marianas Trench Marine National Monument
Philippine Sea
Trench Unit/Refuge
Volcanic Unit/ Arc of Fire Refuge
Wake Atoll NWR
Guam NWR
Philippines
PACIFIC OCEAN
Location Map
Legend
3 Nautical Mile Boundary
Upland/island areas
PRODUCED IN THE DIVISION OF REALTY & REFUGE INFORMATION
PORTLAND, OREGON
LAND STATUS CURRENT TO: 7/14/2009
MAP DATE: 3/7/2016
BASEMAP:
MERIDIAN: N/A
FILE: 14-050-9.MXD
0 0.75 1.5 3
Nautical Miles
Kilometers
0 0.75 1.5 3
N
UTM ZONE 55N
WGS 84


U.S. Fish & Wildlife Service
Proposed - Northern Islands Submerged Lands Conveyance
Commonwealth of the Northern Mariana Islands
Figure 4.
Maug Islands
Overview Map
145°10'0"E
145°15'0"E
20°5'0"N
20°0'0"N
Philippine Sea
Maug Islands
North Island
(Kita)
West Island
(Nishi)
East Island
(Higashi)
3 NAUTICAL MILES
Sea
China
MAUG ISL
Marianas Trench
Marine National Monument
Trench Unit/Refuge
Volcanic Unit/
Arc of Fire Refuge
Guam NWR
Wake Atoll
NWR
Philippines
PACIFIC
OCEAN
Location Map
Legend
3 Nautical Mile Boundary
Upland/island areas
Maug Crater - 1 nm Volcanic Unit Boundary
PRODUCED IN THE DIVISION OF REALTY & REFUGE INFORMATION
PORTLAND, OREGON
LAND STATUS CURRENT TO: 7/14/2009
MAP DATE: 3/7/2016
BASEMAP:
MERIDIAN: N/A
FILE: 14-050-10.MXD
0 0.75 1.5 3
Nautical Miles
Kilometers
0 0.75 1.5 3
N
UTM ZONE 55N
WGS 84


U.S. Fish & Wildlife Service
Proposed - Northern Islands Submerged Lands Conveyance
Commonwealth of the Northern Mariana Islands
Figure 5.
Asuncion Island
Overview Map
145°20'0"E
145°25'0"E
19°45'0"N
19°40'0"N
Philippine
Sea
Asuncion
Island
3 NAUTICAL MILES
China
ASUNCION ISL
Philippine Sea
Marianas Trench
Marine National Monument
Trench Unit/Refuge
Volcanic Unit/
Arc of Fire Refuge
Guam NWR
Wake Atoll
NWR
Philippines
PACIFIC
OCEAN
Location Map
Legend
3 Nautical Mile Boundary
Upland/island areas
PRODUCED IN THE DIVISION OF REALTY & REFUGE INFORMATION
PORTLAND, OREGON
LAND STATUS CURRENT TO: 7/14/2009
MAP DATE: 3/7/2016
BASEMAP:
MERIDIAN: N/A
FILE: 14-050-11.MXD
0 0.75 1.5 3
Nautical Miles
Kilometers
0 0.75 1.5 3
N
UTM ZONE 55N
WGS 84

APPENDIX B. ENDANGERED SPECIES ACT SECTION 7 CONSULTATION

Project: Conveyance of the Northern Islands Submerged Lands to the Commonwealth of the Northern Mariana Islands

Refuge: Pacific Reefs National Wildlife Refuge Complex
Marianas Trench Marine National Monument

Address: 300 Ala Moana Boulevard
Room 5-231, Box 50167
Honolulu, Hawai‘i 96850

Phone: (808) 792-9560

Proposed Action: The United States Department of the Interior proposes to convey lands of the United States that are permanently or periodically covered by tidal waters up to the mean low water line and extending three nautical miles seaward from the mean high tide line of Farallon de Pajaros, Maug, and Asuncion and associated mineral rights to the Commonwealth of the Northern Mariana Islands (CNMI).

As per Presidential Proclamation the Secretary of the Interior currently has management responsibility for the monument, in consultation with the Secretary of Commerce, except that the Secretary of Commerce shall have primary management responsibility, in consultation with the Secretary of the Interior, with respect to fishery-related activities regulated pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.) and any other applicable authorities.

1. Project Overview

1.1 Project Location

The project is located in the Islands Unit of the Marianas Trench Marine National Monument (Monument). The boundaries of the Monument are described in Presidential Proclamation (PP) 8335 and are shown in Appendix A, Figure 1. The subject areas are the submerged lands and waters, and their associated resources, that are permanently or periodically covered by tidal waters up to the of mean low water line and extending seaward to a line three nautical miles distant from the mean high tide line of Farallon de Pajaros, Maug, and Asuncion (including the area within the center of Maug’s islands). The subject area, submerged lands and their overlying water column, are hereby referred to as the Northern Islands Submerged Lands (NISL). The boundaries of the NISL are shown in Appendix A, Figures 1-2.

As trustee for the United States, the U.S. Fish and Wildlife Service (USFWS) has jurisdiction and control of all Monument resources of the Islands Unit, except that the National Oceanic and Atmospheric Administration (NOAA) has primary jurisdiction and control of the fisheries-related activities.

1.2 Description of the Proposed Action

The United States Department of the Interior would convey jurisdiction and control of the NISL to the government of CNMI via a patent with a reserved easement. Jurisdiction and control includes the benthic resources, the living marine resources of the associated water column, and the associated mineral rights within and subterranean of the NISL. Upon conveyance of the submerged lands, CNMI would put into place lasting protections to ensure that the permanent care and management of the benthic and subterranean resources of the NISL as well as the living marine resources of the NISL overlying water column would be consistent with PP 8335, as required by PP 9077. The Department of the Interior would reserve an easement to ensure that the monument resources are forever maintained consistent the PP 8335 and PP 9077, unless such conservation status is withdrawn by an Act of Congress..

The proposed action consists of two interrelated actions.

- The Secretaries and the CNMI Government would develop and sign a MOA that establishes the terms and conditions for the coordination of management of the NISL. Such coordination would include CNMI coordinating their management within their NISL area of jurisdiction with the USFWS and NMFS's respective areas of jurisdiction; and USFWS and NMFS coordinating the management of their respective authorities of jurisdiction in the 3 to 50 nautical miles (~80.5 to ~92.6 km) area beyond the NISL with each other and CNMI, consistent with PP 8335.

- DOI would develop a patent with a reserved easement that requires management of the NISL consistent with PP 8335.

Upon conveyance by the United States of the NISL to CNMI, and at the request of the CNMI Government, the USFWS and NOAA would continue management responsibilities for the conveyed submerged lands, in consultation with the CNMI Government, until such time that the CNMI Government notifies the Interior and Commerce Secretaries of its intent to assume either all or a portion of the management responsibilities of the conveyed submerged lands, and the effective date of such assumption. During this period, USFWS and NOAA would continue to consult with the CNMI Government on management of the conveyed submerged lands.

Upon assuming management responsibilities, and in coordination with USFWS and NOAA, CNMI would manage the NISL consistent with the purposes and requirements of PP 8335 and PP 9077, the Commonwealth Constitution, and other applicable laws. DOI would reserve an easement for the United States to ensure that the MTMNM resources are forever maintained consistent with PP 8335 and PP 9077.

The Memorandum of Agreement establishes the principles for the future coordination of management of the NISL which would:

- preserve and protect natural resources, including, but not limited to bird, wildlife, and plant species as required by the section 2 of Article XIV of the Commonwealth Constitution;

- recognize that the Monument is a place of maritime cultural significance for the Chamorro and Carolinian residents with cultural connections throughout the Mariana Islands by managing, to the extent compatible with the conservation and management goals of PP 8335, the Monument resources within the NISL in a manner that honors the unique heritage of the indigenous cultures;
- provide protections for resources when there is uncertainty regarding impacts of activities that are to be permitted in the NISL;
- prohibit the appropriation, injury, destruction, or removal of any Monument object or resource within the NISL, except as may be allowed under PP 8335;
- permit scientific exploration and research within the Monument in a manner consistent with PP 8335;
- permit sustenance, recreational, and traditional indigenous fishing in a sustainable fashion consistent with PP 8335 and applicable laws;
- prohibit commercial fishing and mineral extraction;
- adopt best practices for an adaptive management approach that incorporates conservation management strategies, scientific principles, and traditional ecological knowledge;
- consider scientific exploration, research advances, and technology to learn about and develop greater understanding of the Monument objects and resources;
- enhance public appreciation of the unique character and environment of the Monument, and promote conservation management of these areas through outreach and education activities;
- establish effective monitoring of and enforcement for permitted activities;
- allow for innocent passage in the NISL and would not otherwise restrict navigation, overflight, and other internationally recognized lawful uses of the sea; and
- maintain consistency with provisions of PP 8335 regarding actions of the Armed Forces and international law.

The patent would reserve to the United States an easement in perpetuity to ensure that the lands and resources conveyed to the government of CNMI are forever managed and maintained for the protection of the resources of the Monument as directed in PP 8335, unless such conservation status is withdrawn by an Act of Congress. The United States and the government of CNMI would be bound by the terms of the easement which stipulates that the NISL would be maintained by CNMI consistent with the Monument or other federal conservation status of adjacent federal submerged lands. No commercial fishing or development of the NISL would be authorized or allowed to take place in the navigable waters overlaying the NISL.

Nothing in the easement would limit the rights of the Government of CNMI to manage sustenance, recreational, and traditional indigenous fishing within the NISL as a sustainable activity in accordance with PP 8335 or conduct or to authorize to undertake bona fide scientific research, nor would it limit the rights of CNMI and DOI and DOC for coordination of their respective management as set forth in the MOA. Nothing in the easement would limit the reserved rights of the United States as set forth in section 2 of Public Law 93-435, as amended by Public Law 113-34. In addition, nothing in the easement would require the Government of CNMI to manage or maintain a more protective conservation regime with respect to the NISL and associated natural resources than that regime authorized by applicable federal law for the adjacent federal submerged lands and associated natural resources.

Persons duly authorized by the Secretary of the Interior or the Secretary of Commerce to enter lands covered by the easement for scientific purposes, for inspection, or for any purpose related to ensuring enforcement of the easement would be allowed unfettered access upon advance notice to the government of CNMI. In the case of emergencies, such access would be allowed without prior notification, provided that such notice is given to the government of CNMI at the next earliest practicable opportunity.

Upon conveyance of the NISL, CNMI would have ownership of the submerged lands, and various rights with respect to the associated waters, and the monument resources contained therein, and which would be managed consistent with PP 8335. Although primary management responsibility is vested in CNMI, the United States through the MOA and the reserved easement within the patent would be able to continue to ensure the protection of Monument resources within the NISL. In addition, the Secretaries would be able to take appropriate actions to protect various Monument resources pursuant to such non-place-based authorities as the Endangered Species Act and the Marine Mammal Protection Act.

As directed by PP 8335, NOAA and USFWS would prepare a Monument Management Plan (MMP) for the proper care and management of the objects identified in PP 8335, and invite the CNMI Government to participate as a cooperating agency in developing the plan. The Secretaries of Commerce and the Interior would incorporate into the MMP provisions for coordination of management in protecting the coral reef ecosystems and related marine, cultural and historic resources, and objects of historic or scientific interest of the Monument.

1.3 Action Area

The Action Area is the NISL, which includes the lands that are permanently or periodically covered by tidal waters up to, but not above, the mean low water line, and extending three nautical miles seaward, from the mean high tide lines of Farallon de Pajaros, Maug, and Asuncion in the CNMI, including the area inside the islands of Maug.

Farallon de Pajaros, Maug, and Asuncion are the northern most islands of the Mariana Archipelago. The Archipelago formed within the last 5 million years by the subduction of the Pacific Plate under the Philippine Plate at the Mariana Trench. The islands are active or dormant stratovolcanoes. The seafloor and land are characterized by moderate to steep slopes that have been shaped by periodic explosive eruptions and landslides. The steep onshore and offshore slopes, narrow ridges, and few offshore terraces, result in total potential reef areas that are much smaller relative to the southern islands of the archipelago.

Coral reefs and other benthic substrates of the Islands Unit are important habitats for a variety of fish species. The reef fish found around the Mariana Archipelago have been described as representative of the wider Indo-Pacific fauna. The majority of species found there are widespread throughout the Indo-Pacific region.

Typical of many isolated islands and atolls, the number and sizes of apex-predators per unit area is much higher in the Islands Unit than in the waters around the inhabited southern islands of the Marianas Archipelago. Large numbers of apex predators indicate a naturally flourishing

ecosystem at every trophic level in the food chain. Sharks, snappers, and jacks are found in abundance around the islands of Farallon de Pajaros, Maug, and Asuncion.

1.4 Project Timeline

The NISL is scheduled to be conveyed to CNMI in the fall of 2016.

1.5 Federally Listed Species and Critical Habitat

1.5.1 Listed Species

Species listed under the Endangered Species Act that may occur in the Action Area are provided in Table 1.

Table 1. Species listed under the Endangered Species Act that may occur in the Action Area

Common Name	Scientific Name	ESA Status*
Hawaiian petrel	*Pterodroma sandwichensis*	E
Newell's shearwater	*Puffinus auricularis*	T
Short-tailed albatross	*Phoebastria albatrus*	E
Blue whale	*Balaenoptera musculus*	E
Fin whale	*Balaenoptera physalus*	E
Humpback whale	*Megaptera novaeangliae*	E
Sei whale	*Balaenoptera borealis*	E
Sperm whale	*Physeter macrocephalus*	E
Green sea turtle	*Chelonia mydas*	T
Hawksbill turtle	*Eretmochelys imbricata*	E
Leatherback turtle	*Dermochelys coriacea*	E
Loggerhead sea turtle	*Caretta caretta*	E
Olive Ridley sea turtle	*Lepidochelys olivacea*	T
Scalloped hammerhead shark	*Sphyrna lewini*	T
Needle coral	*Seriatopora aculeate*	T
No common name	*Acropora globiceps*	T
Blunt coral	*Acropora retusa*	T

* E = Endangered; T = Threatened

The species list provided by USFWS Ecological Services included the Micronesian megapode (*Megapodius laperouse*) (Endangered), Mariana fruit bat (*Pteropus mariannus mariannus*) (Threatened), and Marianas/Slevin's skink (*Emoia slevini*) (Proposed for Listing). These species are all terrestrial and do not forage or otherwise use the marine environment, and would not occur in the Action Area.

Critical Habitat

There is no designated critical habitat within the action area.

1.5.2 Proposed Species and/or Proposed Critical Habitat

There are no species proposed for listing that are known to occur in the action area. There is no proposed critical habitat within the action area.

1.5.3 Candidate Species.

There are no species that are candidates for listing that are known to occur in the action area.

2. Effects Analysis

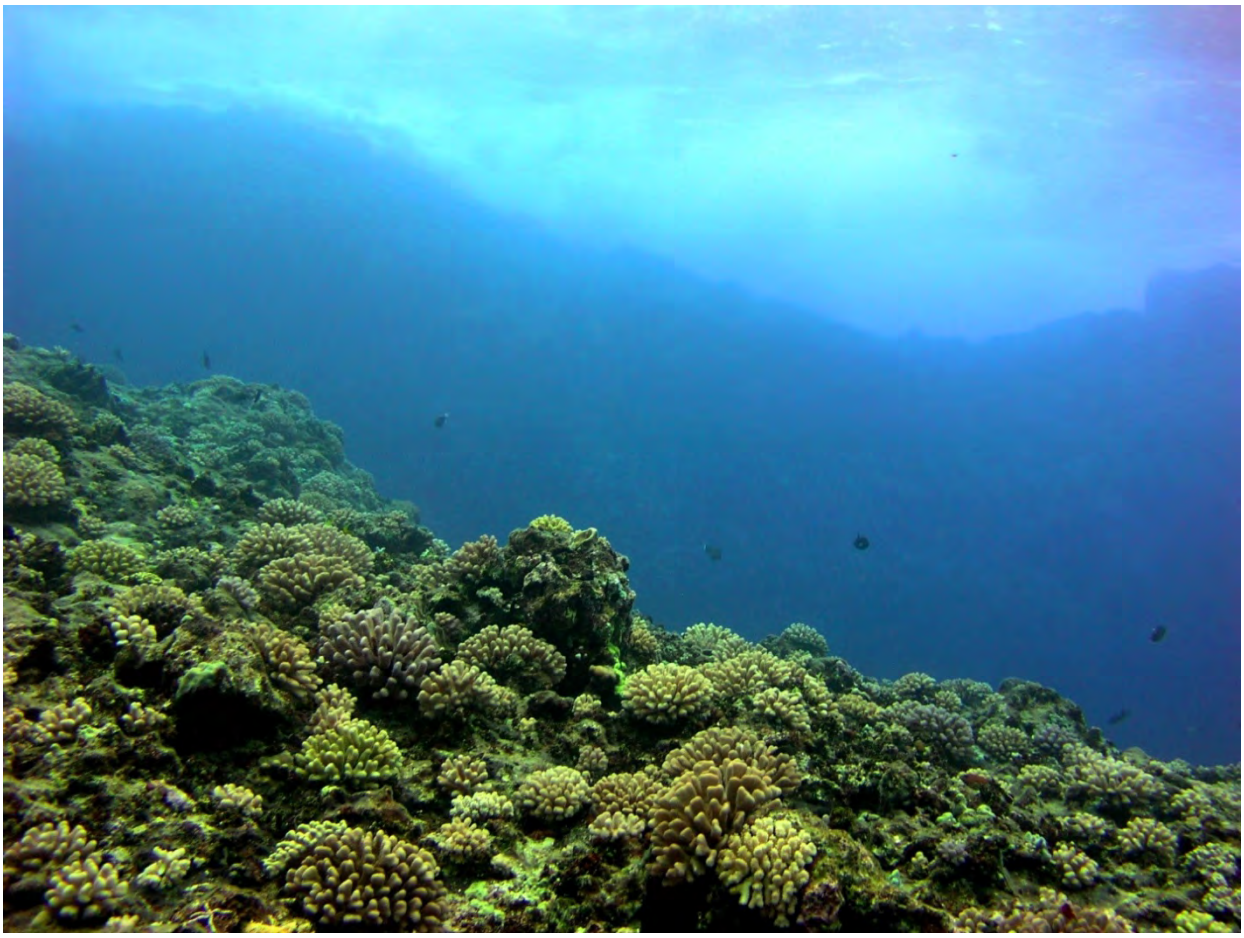
The proposed action would have *no effect* on the listed species occurring within the Action Area. Currently, the waters and the submerged lands surrounding the three islands are managed as part of the Islands Unit of the Monument. PP 8335 which established the Monument stated as one of its purposes the lasting protection of the marine environment around the islands of Farallon de Pajaros, Maug, and Asuncion. In establishing the Monument, PP 8335 noted that "*it is in the public interest to preserve the known volcanic areas of the Mariana Ridge, the marine environment around the islands of Farallon de Pajaros, Maug, and Asuncion in the Commonwealth of the Northern Mariana Islands, and the Mariana Trench for the care and management of the scientific objects therein*."

As directed by PP 8335, submerged lands that are subsequently granted by the United States to CNMI, would remain controlled by the United States under the Antiquities Act as part of the Monument. As such, future management of the NISL must comply with the findings and stipulations of PP 8335 including not allowing or permitting "*any appropriation, injury, destruction, or removal of any feature of this monument except as provided for by this proclamation or as otherwise provided for by law.*"

The three actions included under the proposed action (the Memorandum of Agreement, the patent with the reserved easement, and the MMP) would ensure that the NISL are managed consistent with the requirements of PP 8335 and be forever managed and maintained for the protection of the resources contained therein.

Because conveyance of the NISL would maintain current management of the Action Area and maintain the environmental baseline in conformance with PP 8335, the proposed conveyance would have *no effect* on the listed species within the action area.

APPENDIX C. DRAFT ENVIRONMENTAL BASELINE STUDY



Location: Submerged lands surrounding the Northern Mariana Islands of Maug, Farallon de Pajaros, and Asuncion

Area Name: Northern Mariana Islands Submerged Lands (NISL)

Project: Proposed NISL Transfer to the Commonwealth of the Northern Mariana Islands (CNMI)

Issued by: U.S. Fish and Wildlife Service
Marianas Trench Marine National Monument

Date: April 9, 2015

Content

Executive Summary

The U.S. Fish and Wildlife Service (Service) has prepared this Environmental Baseline Survey (EBS) in preparation for the transfer of submerged lands (herein referred to as the "Property") to the Commonwealth of the Northern Mariana Islands Government. The Property is submerged lands, below the mean low water line out to 3 nautical miles seaward of three separate islands, Maug, Farallon de Pajaros, and Asuncion, located in the northernmost reaches of the Northern Mariana Islands chain. The purpose of this EBS is to document the environmental condition of the property, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act's (CERCLA) pre-transfer requirements.

This EBS was prepared in conformance with the American Society for Testing and Materials (ASTM) Designation D 6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Survey*. The Property is currently designated as territorial submerged lands, owned by the United States.

The area of the Property is approximately 171 square miles. Due to the remoteness of the location, vast size of the area, and the nature of submerged lands, there were several limitations with inspecting the Property directly. However, a few recent surveys of submerged lands near the emergent lands, and hence most likely impacted areas of the Property, were available and are referenced in this EBS.

The Property consists solely of submerged lands and, as such, is and has always been uninhabited. The abutting emergent lands have historically been uninhabited as well, with a few exceptions around the end of the 19th century and possibly during World War II (WWII). Historic uses include fishing and ecotourism, however slight due to the Property's remoteness. These activities may have resulted in environmental conditions in the past but evidence of contamination is scarce. One known notable environmental condition is a recent shipwreck on the coast of Maug which resulted in petroleum contamination. However, the contamination was determined at the time to have dissipated and be of such concentration that did not require remediation.

This EBS evaluates the current known conditions of the Property and categorizes the Property as Area Type 3 or areas where release, disposal, and/or migration of hazardous substances have occurred, but at concentrations that do not require a removal or remedial action. No hazardous substances are known on the properties, thereby warranting an Area Type 2 designation or areas where only release or disposal of petroleum products has occurred. However, the unknown circumstances of marine debris and the remote location leaves open the possibility that hazardous materials may have migrated onto the properties at one time. However, there are no concentrations of hazardous materials at this time that have or do require removal or redial action so an Area Type 4 designation is not warranted.

1. Introduction

On September 18, 2013, Public Law 113-34 amended Public Law 93-435, to provide CNMI parity with the other U.S. island territories, by providing for the conveyance from the United States to the CNMI Government, the submerged lands and associated mineral rights located between the line of mean high tide and a line located three (3) geographical miles seaward from the coastlines of the CNMI, and permanently or periodically covered by tidal waters.

The U.S. Fish and Wildlife Service is the lead agency for completing an environmental assessment of a proposal which would result in the U.S. Department of the Interior transferring the Northern Islands Submerged Lands surrounding Maug, Farallon de Pajaros, and Asuncion Islands (the Property or NISL) from the United States to the Commonwealth of the Northern Mariana Islands Government (CNMI).

1.1 Objective/Purpose

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 requires Federal agencies to evaluate the environmental condition of property and to take remedial actions as necessary to protect human health and the environment before transferring property. Section 120(h) of CERCLA establishes the regulatory process. Pursuant to Section 120(h) of CERCLA, the Service in conducting an Environmental Baseline Study (EBS) of the NISL.

1.2 EBS Classification

The Property is classified based upon the seven following Standard Environmental Condition of Property Types described in ASTM Designation D5746-98 (2002), Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities.

- *Standard Environmental Condition of Property Area Type* 1 -- An area or parcel of real property where no release or disposal of hazardous substances or petroleum products or their derivatives has occurred (including no migration of these substances from adjacent properties).
- *Standard Environmental Condition of Property Area Type 2* -- An area or parcel of real property where only the release or disposal of petroleum products or their derivatives has occurred.
- *Standard Environmental Condition of Property Area Type 3* -- An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action.
- *Standard Environmental Condition of Property Area Type 4* -- An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, and all remedial actions necessary to protect human health and the environment have been taken.

- *Standard Environmental Condition of Property Area Type 5* -- An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred and removal or remedial actions, or both, are under way, but all required actions have not yet been taken.
- *Standard Environmental Condition of Property Area Type 6* -- An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but required response actions have not yet been initiated.
- *Standard Environmental Condition of Property Area Type 7* -- An area or parcel of real property that is unevaluated or requires additional evaluation.

1.3 Assumptions and Limitations

The extreme remote location of the property excluded the opportunity of a site visit. Project activities were limited to researching literature and reports of the areas. Additionally, while various sources were available about the adjacent properties (the islands of Maug, Farallon de Pajaros, and Asuncion) very little was available about the property itself (submerged lands around the islands). This report relied heavily on the information gathered in the Draft Marianas Trench Marine National Monument Management Plan.

2. Site Description

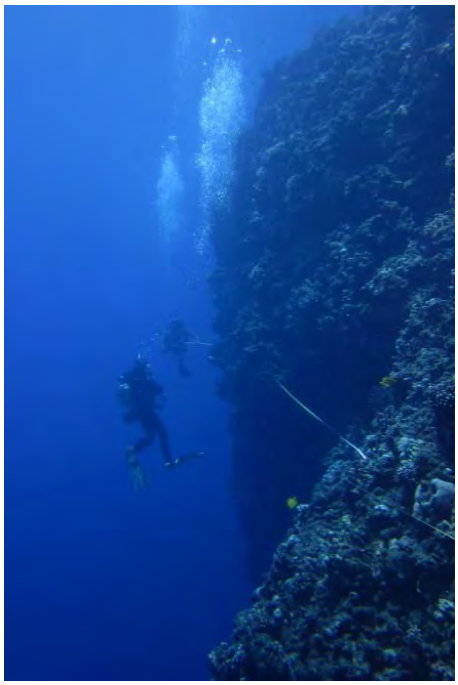
2.1 Site Locations

Farallon de Pajaros - 20° 31’ N, 144° 54’ E

Maug - 20° 2’ N, 145° 13’ E

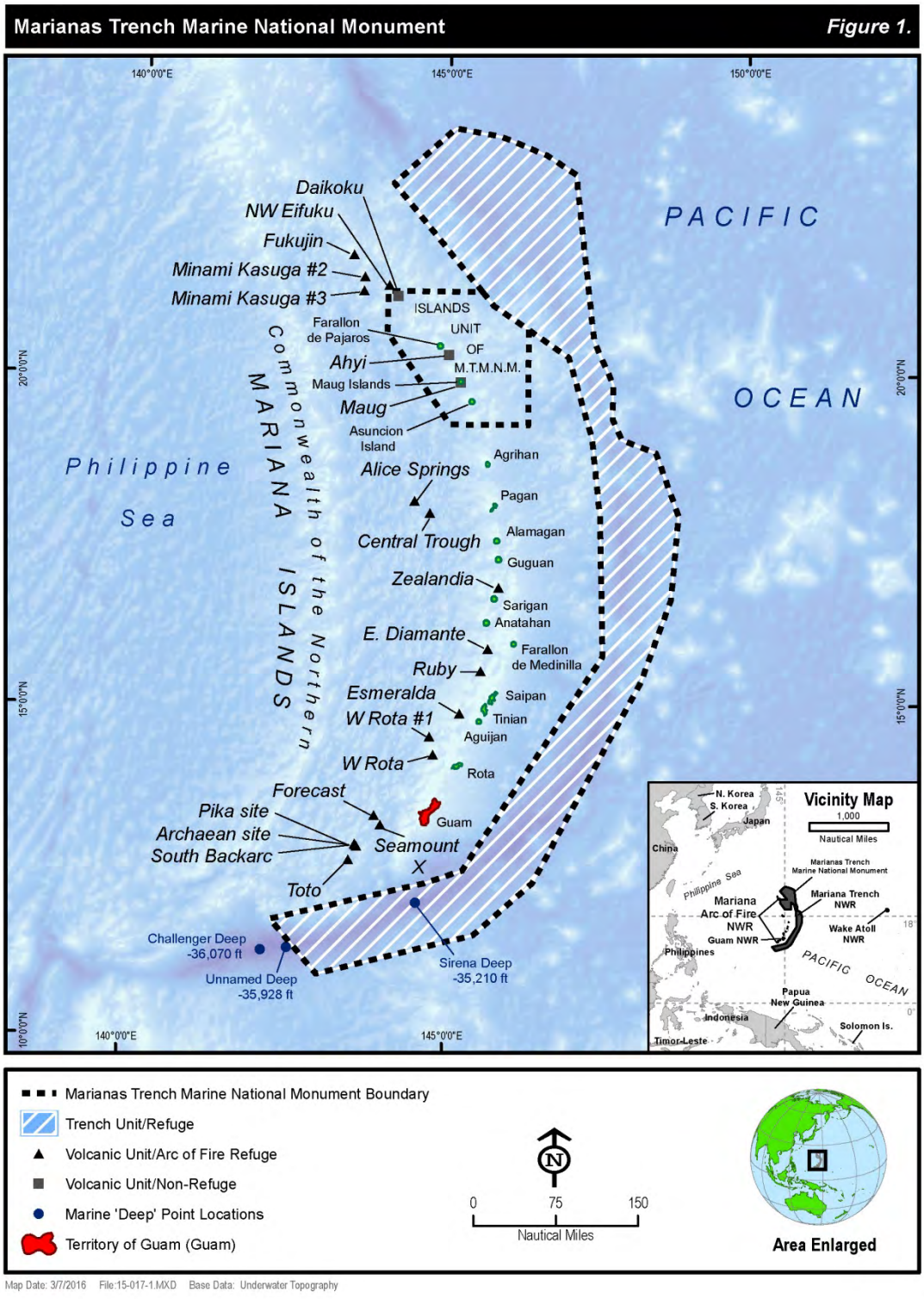
Asuncion - 19° 41’ N, 145° 14’ E

Farallon de Pajaros is the most active volcano of the Mariana Islands. Photo: Larry Lee



Vertical benthic REA site at Asuncion. Photo: Russell Reardon/NOAA

The lagoon of Maug Photo: Sephani Gordon/Open Boat Films/NOAA


Marianas Trench Marine National Monument
Figure 1.
140°0'0"E
145°0'0"E
150°0'0"E
20°0'0"N
15°0'0"N
10°0'0"N
PACIFIC
OCEAN
Philippine
Sea
Commonwealth of the Northern
MARIANA
ISLANDS
UNIT
OF
M.T.M.N.M.
ISLANDS
Daikoku
NW Eifuku
Fukujin
Minami Kasuga #2
Minami Kasuga #3
Farallon
de Pajaros
Ahyi
Maug Islands
Maug
Asuncion
Island
Agrihan
Alice Springs
Pagan
Central Trough
Alamagan
Guguan
Zealandia
Sarigan
Anatahan
E. Diamante
Farallon
de Medinilla
Ruby
Esmeralda
Saipan
W Rota #1
Tinian
Aguijan
W Rota
Rota
Forecast
Pika site
Archaean site
South Backarc
Guam
Seamount
X
Toto
Challenger Deep
-36,070 ft
Unnamed Deep
-35,928 ft
Sirena Deep
-35,210 ft
Vicinity Map
1,000
Nautical Miles
N. Korea
S. Korea
Japan
China
Philippine Sea
Marianas Trench
Marine National Monument
Mariana Trench
NWR
Mariana
Arc of Fire
NWR
Guam NWR
Wake Atoll
NWR
Philippines
PACIFIC
OCEAN
Papua
New Guinea
Indonesia
Timor-Leste
Solomon Is.
Marianas Trench Marine National Monument Boundary
Trench Unit/Refuge
Volcanic Unit/Arc of Fire Refuge
Volcanic Unit/Non-Refuge
Marine 'Deep' Point Locations
Territory of Guam (Guam)
N
0
75
150
Nautical Miles
Area Enlarged
Map Date: 3/7/2016
File:15-017-1.MXD
Base Data: Underwater Topography

2.2 Site Physical Description

The Mariana Islands are an arc-shaped archipelago made up by the summits of fifteen volcanic mountains that sit atop the Mariana Ridge in an area known as the Mariana Volcanic Arc. Located in the north-western Pacific Ocean between the 12th and 21st parallels north and along the 145th meridian east, they are south of Japan and north of New Guinea, and form the eastern limit of the Philippine Sea. Over 480 nmi long, the archipelago encompasses the United States Commonwealth of the Northern Mariana Islands (the northern 14 islands) and the United States Territory of Guam (the southernmost island). The Mariana Volcanic Arc is part of a subduction system in which the Pacific Plate plunges beneath the Philippine Sea Plate and into the Earth's mantle, creating the Mariana Trench. Six of the archipelago's islands have been volcanically active in historic times, and numerous seamounts along the Mariana Ridge are volcanically or hydrothermally active.

The Monument is comprised of three distinct units covering 96,714 square miles of submerged lands and waters in and adjacent to the archipelago: the Trench Unit/Refuge, the Volcanic Unit/Arc of Fire Refuge, and the Islands Unit:

Islands Unit

The Islands Unit includes the submerged lands (below the mean low water line) and waters surrounding the three northernmost Mariana Islands: Farallon de Pajaros, Maug, and Asuncion. The Unit is defined by an irregular boundary containing approximately 12,387 square nmi (Figure 1). The distances from each island to the nearest point on the Unit boundary are as follows: Asuncion Island - 20 nmi southerly; Maug Islands - 31 nmi southwesterly; Farallon de Pajaros - 34 nmi southwesterly.

The waters of The Islands Unit are among the most biologically diverse in the Western Pacific and include a great diversity of seamount and hydrothermal vent life. TheUnit's volcanic islands are ringed by coral ecosystems with very high numbers of apex predators, including large numbers of sharks. They also contain one of the most diverse collections of stony corals in the Western Pacific. The terrestrial lands of these islands are designated as wildlife conservation areas under the sole jurisdiction of the CNMI government.

2.3 Site and Vicinity Characteristics

Little detail is known of the submerged lands of the islands. One of the few data sources about coral reef ecosystems in the northern islands comes from the NOAA Pacific Island Fisheries Science Center's (PIFSC) MARAMP cruises that occurred in 2003, 2005, 2007, 2009, 2011, and 2014. Although surveys have been conducted around each of the three islands in the Islands Unit, survey coverage varied based on cruise schedules and island accessibility. A detailed report of these surveys may be found at:
http://www.pifsc.noaa.gov/cred/coral_reef_ecosystem_monitoring_reports.php#sp-12-01.

Farallon de Pajaros

Summit Elevation: 1180 feet

Farallon de Pajaros is a high volcanic cone, with a maximum elevation of 1,180 feet. It is located approximately 315 nmi north of Saipan. The island is 1.2 miles long and 1 mile wide, with an area of approximately 1 mi^2. Farallon de Pajaros earned the nickname "The Lighthouse of the Western Pacific" for being the most active volcanic island in the Mariana archipelago having erupted at least 16 times since 1864, most recently in 1978 (Eldredge 1983, Asakura et al. 1994, Brainard et al. 2012). The island's steep slopes were formed by frequent flows of lava and ash. The symmetrical summit is formed by a central cone within a small caldera cutting an older edifice, remnants of which are seen on the southeast and southern sides near the coast. Lava poured not only from the summit, but also from fissures on the volcano flanks, which created platforms along the coast. Both summit and flank vents have been active at Farallon de Pajaros in recent history and much of the island is covered in lava, cinders, and ash.

NOAA Ship Hi'ialakai at Farallon de Pajaros in 2007. Photo: R. Schroeder/NOAA

Monitoring volcanic activity on Farallon de Pajaros is difficult, given the island's remote location. USGS researchers reported "vigorous fuming" during a 1994 over flight, but no eruptive activity. Similar observations were made by volcanologists from the University of California during a 2009 visit (Sako et al. 1995, University of California San Diego 2009).

Submerged lands

Bathymetry data indicate the steep slopes of Farallon de Pajaros continue into the submarine zone, over 1 mile deep. Ridges radiate perpendicular to the island, with few flat areas. Shelf areas occur at 30-130 feet and approximately 500-800-1000 feet. Ridges and channels descend from the steep shelf slopes.

Coral community on the slopes of Farallon de Pajaros. Photo: NOAA

MARAMP data suggest different seabed characteristics in the northeast and southeast offshore areas in comparison to the south and west offshore areas. The highest levels of sand cover were recorded on the shallow shelf extending from large embayments to the northeast and southeast nearshore areas. The main habitat type in this area was boulders on sand. In some locations, hard pavements were seen extending into sandy slopes.

To the west and south of the island, little sand cover was found, generally ranging from 10% to 30%. The predominant habitat was boulders on sand with some patches of rocky reef. Surveys found very low levels of live coral cover, rarely exceeding 20%, in all of the areas surveyed. These low levels of coral cover may be a result of the recent volcanic activity, or the steeply sloping boulder and sand habitats provide little substrate suitable for coral settlement (Brainard et al. 2012).

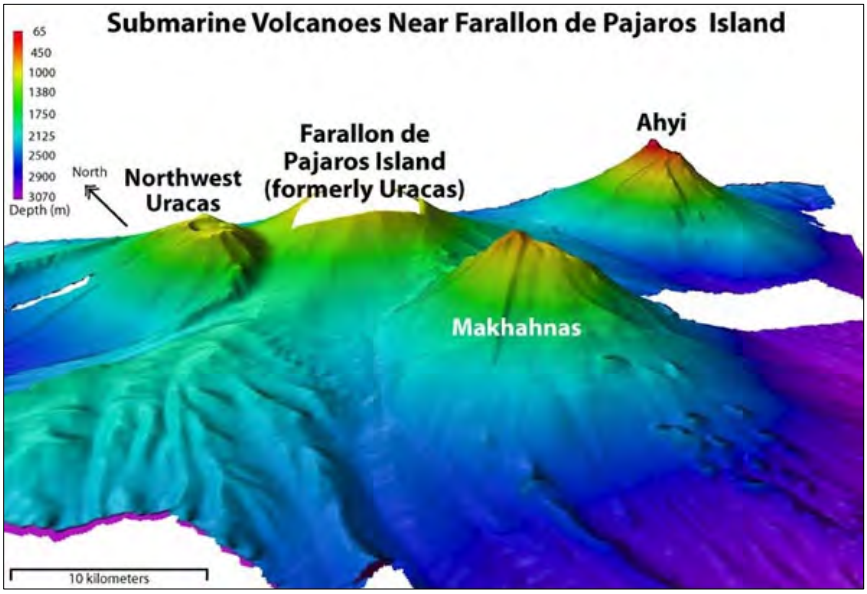


Figure C-2. Farallon de Pajaros Bathymetry *Image: NOAA*

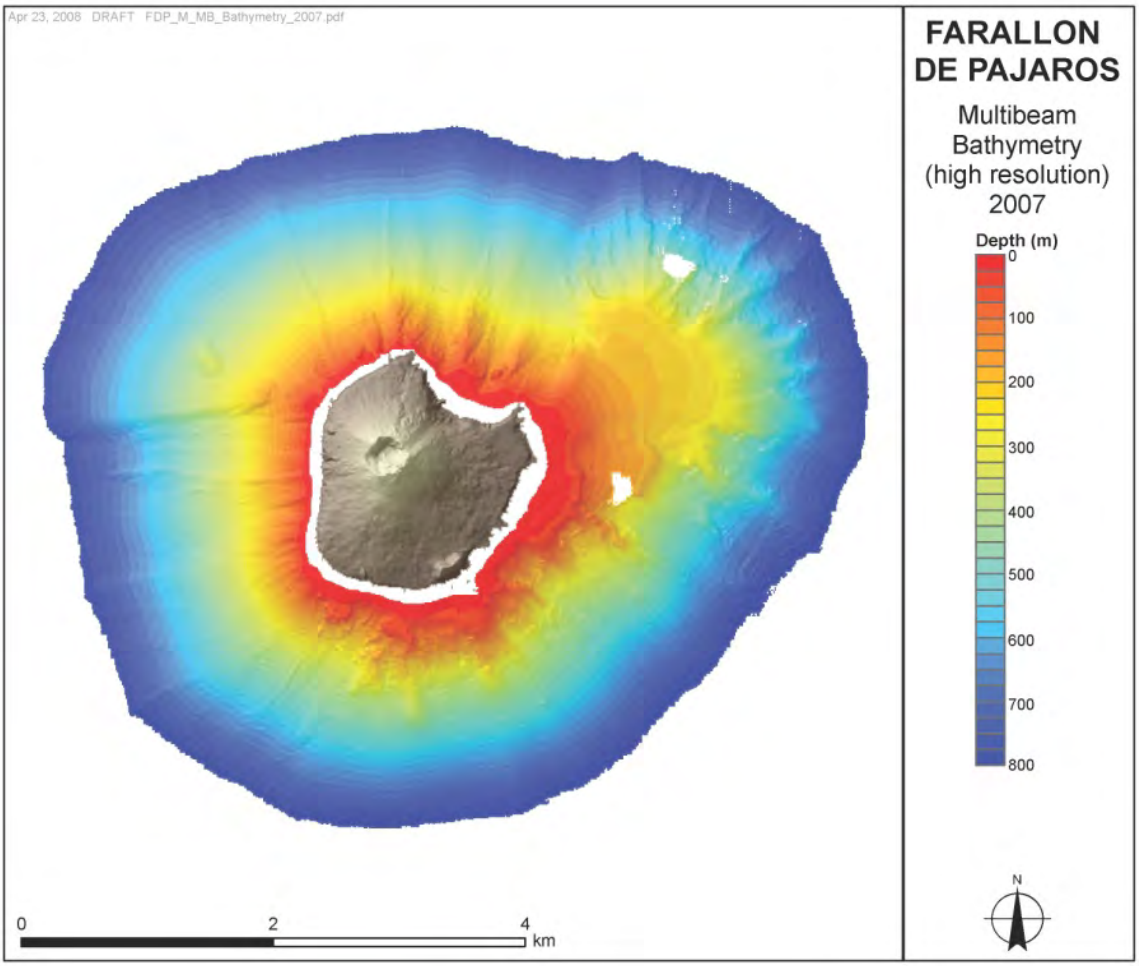


Figure C-3. Farallon de Pajaros bathymetry *Image: NOAA*

Maug

Summit Elevation: 744 feet

Maug consists of three steep-sided, exposed islets separated by deep-water channels. The islets are the above sea-level remnants of what is now a largely submerged volcano. The islets are individually named and go by English and Japanese names: "North" or "Kita-shima" (744 feet height); "East" or "Higashi-shima" (705 feet height); and "West" or "Nishi-shima" (583 feet height). Maug is located 329 miles north of Saipan. The three islets have a total area of approximately 0.8 miles^2. The outer shore of the three islets' diameter is 2.1 miles while the inner diameter of the submerged caldera is approximately 1.4 miles. A caldera is formed when a volcano collapses inward after an eruption, resulting in a bowl-shaped depression at the top of a volcano. The depression may be flooded by sea water, creating the illusion of separate land masses above sea level, as is the case with Maug. Maug's caldera–islet structure is unique in the Mariana Islands. The volcano was dormant for many years, allowing its lava to cool and plug all the vents. It eventually became active again and immense pressure built up under the plugged vents, causing the volcano to explode, giving Maug its current shape (Farrell 2011). Each islet remnant has steep cliffs made of columnar basalt. A submerged coral limestone terrace occurs at 82 feet below sea level off West Island.

Volcanic eruptions have not been recorded for Maug since the first Western sighting of the islands by Espinosa in 1522 and recent U.S. Geological Survey (USGS) over flights have not observed geothermal activity above the ocean surface. However, NOAA expeditions have discovered hydrothermal venting on the dacite dome in the center of the caldera. A hydrothermal vents system in the caldera releases CO_2 bubbles, which creates more acidic waters in the immediate vicinity of the vents - measuring a pH of 6.07 near the vents, versus 8.13 for the surrounding region. Water temperatures at the vent site were 60-93°F above the surrounding subsurface water temperatures (PIFSC 2010).

Gas bubbles rising from Maug crater. Image: NOAA

Submerged Lands

The multibeam bathymetry acquired by NOAA's Coral Reef Ecosystem Division (CRED) during MARAMP 2007 around Maug reveals the submerged caldera at a depth of 200–240 meters (m), from which a twin-peaked submarine dome rises to a depth of 20 m. This submarine dome is likely the youngest feature of the volcano. The bathymetry data show the volcano's steep outer flanks, which descend rapidly to the depth of 1000 m within ~ 3 kilometers (km) of the shoreline. North and east of Maug, the seabed continues to descend until reaching a plateau at a depth of ~ 2100 m. Northwest of Maug at a depth of ~ 1700 m, the seabed descends to a channel, which separates Maug from a submarine volcanic cone 18 km northwest called Supply.

The bathymetry shows shallow ridges and channels on the flanks, and a steep-sided ridge is present northeast of North Island. North and west of Maug, the multibeam bathymetry reveals large blocks of material on the deep flanks. At 4–8 km southeast of East Island, the bathymetry data reveal an anomalous feature that rises from the main flanks at a depth of ~ 1600 m to a depth of 850 m. The two mechanisms that might have caused this feature are mass wasting (the movement of soil and surface materials by gravity) and volcanic activity.

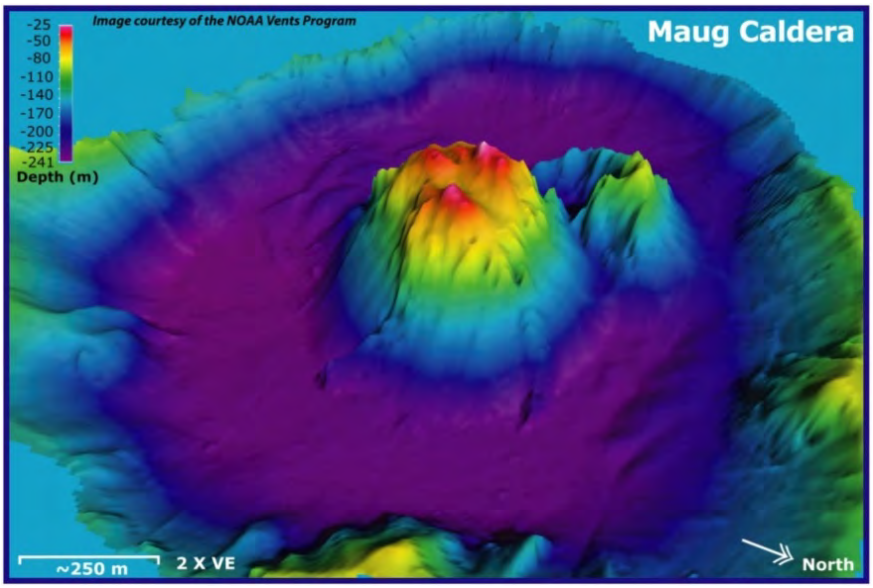
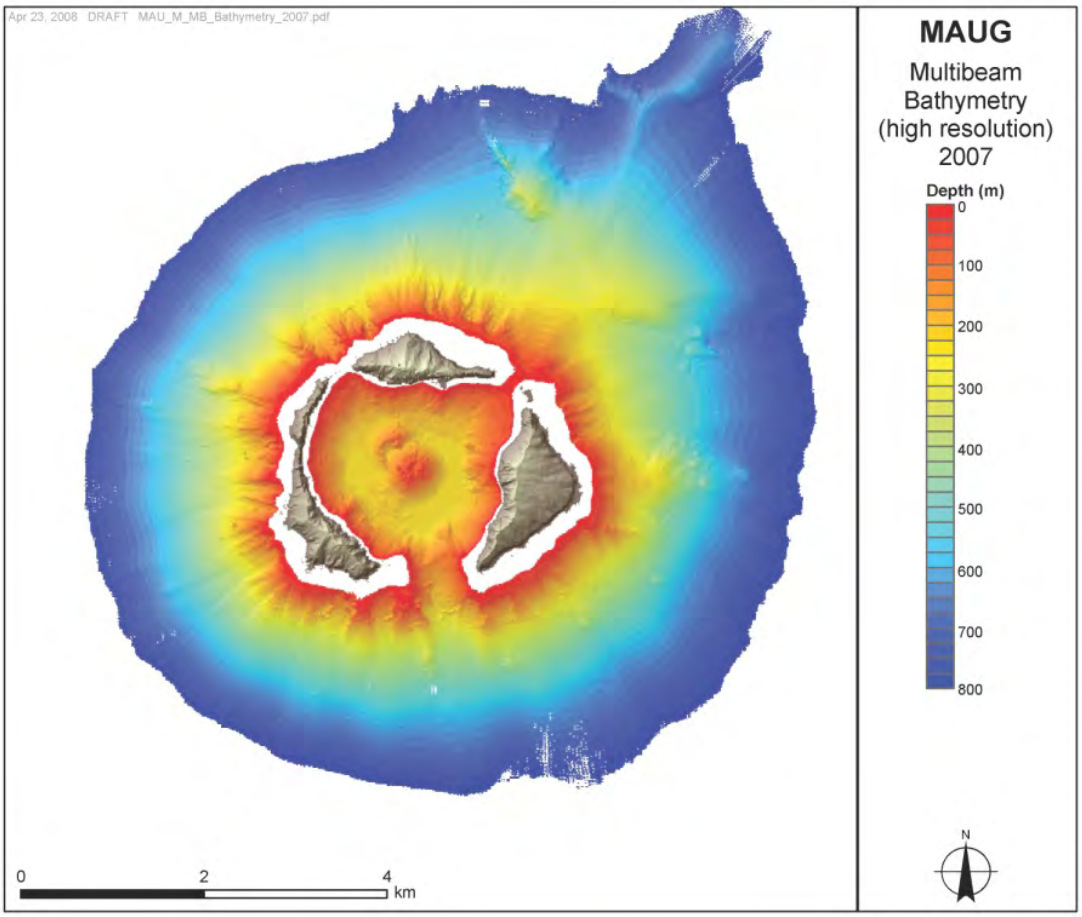


Figure C-4. Maug Caldera bathymetry *Image: NOAA*



Maug bathymetry *Image: NOAA*

Generally habitats were hard substrates and low levels of sand cover, relative to other areas surveyed in the Mariana Archipelago. Sand observed in deeper waters was related to topographic features with sand accumulating between ridges. Overall mean live coral cover was 21%–27% in the shallow waters and very little live coral cover was in deeper waters. Live coral cover was observed on the central dome at a depth of ~ 160 m. Across the 3 MARAMP survey years, crustose coralline red algae were less abundant inside the caldera than on the outer flanks of Maug (Brainard et al. 2012).

Asuncion

Summit Elevation: 2,812 feet.

About 300 nmi north of Saipan, Asuncion has an area of 2.8 mi^2. The island is a high volcanic cone with steep cliffs on the northeastern side and gentler slopes on the southwestern side. Erosion and landslides have carved into Asuncion, producing northern sea cliffs.

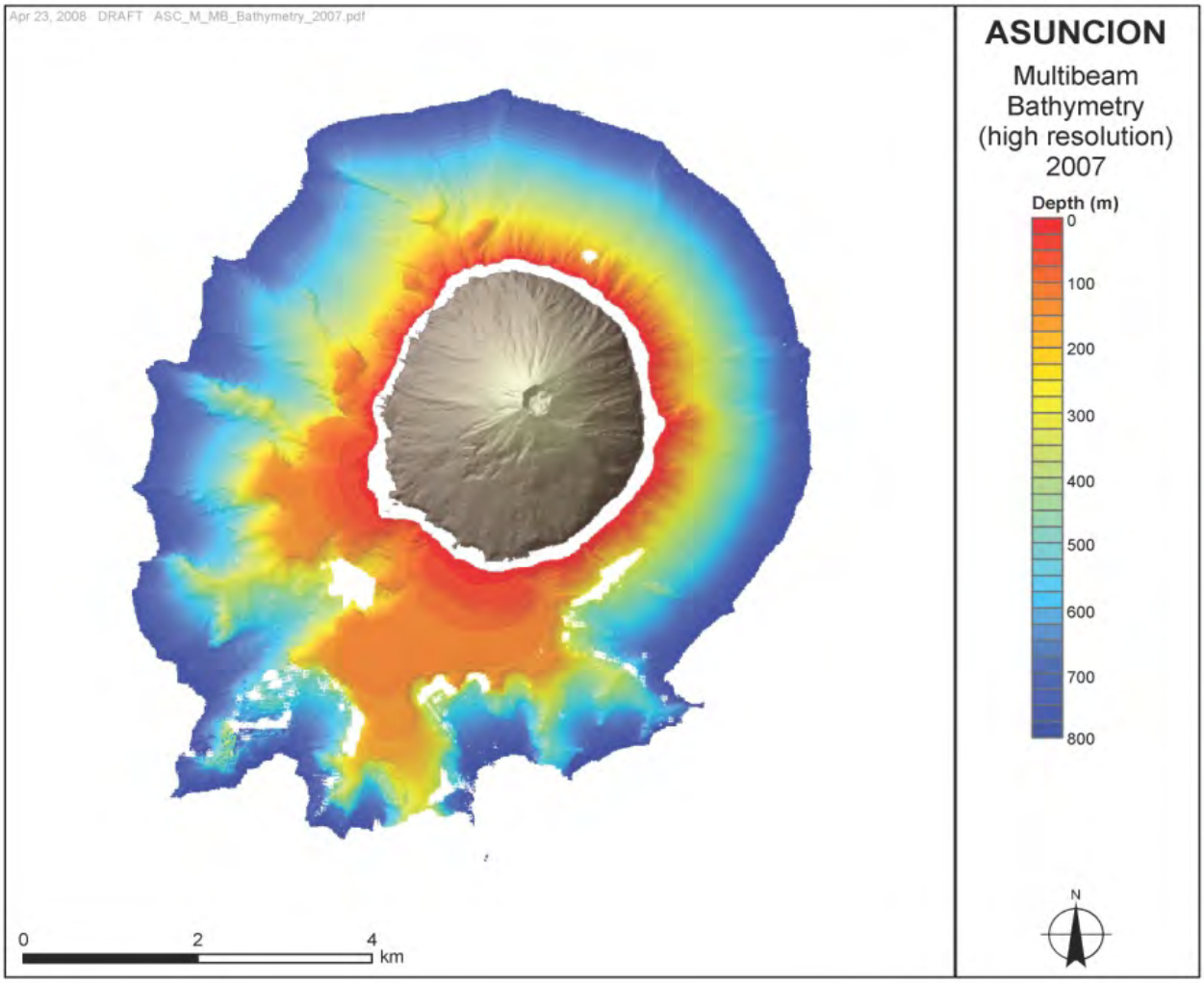


Figure C-6. Asuncion bathymetry Image: NOAA

Submerged Lands

Steep flanks continue into the ocean to depths of about 1.4 miles, consisting of several terraces, broken with ridges and channels. Asuncion is the steepest of the three islands which is reflected in the submerged lands topography. MARAMP found the nearshore submerged lands off the north and northeast of the island to be steeply sloping, irregular, rocky reef and boulders, and hard substrates supporting low levels of live hard coral cover. In one area off the northeast shore they found that sand cover was predominantly < 20% , although a small patch of higher sand cover (20.1%–30%) was observed where 2 deep channels cut into the flanks of the volcano.

South and southeast of Asuncion the nearshore submerged lands are dominated by a large, low-rugosity shelf composed of a number of terraces. They found 2 areas of sandy habitats with sand cover of 30.1%–100% and live coral cover < 10%. The northernmost of these 2 sandy areas had boulders on sand. South of this area was an extensive sandy shelf with habitats described as spur-and-groove formations, sand flat, and boulders on sand. Located between these 2 sandy areas were hard substrates with < 30% sand cover and < 20% live coral cover.

Southwest of Asuncion, MARAMP found an area characterized by live coral cover of 5.1%–20% and low sand cover of 1.1%–20%. They described this habitat as ridges, boulders, continuous reef, and walls. Approximately west of the island was found a spur and groove habitat where sand cover was generally < 20%. This habitat supported the highest level of live coral cover seen around Asuncion (coral cover of ~ 30.1%–60%). However, on the shelf below, at depths of 55–110 m, their analysis suggested a seabed characterized by high sand cover and very low live coral cover—with only one analyzed video frame showing live coral cover of 20%. At 50 m, one survey revealed patches of high sand cover but no live coral cover (Brainard et al. 2012).

2.4 Other Site Features

Benthic refers to anything associated with or occurring on the bottom of a body of water, in this case the ocean bottom. Emphasis is generally placed on coral reefs when describing ocean benthic habitats. However, other substrates, or surfaces upon which a plant or animal can live such as sand and sea grass, are also important components of the marine environment. These benthic habitats are particularly important in the Islands Unit of the Monument since coral cover is relatively sparse. Habitat surveys from the MARAMP cruises show varying amounts of sand, macroalgae, and crustose coralline algae around the islands of Maug, Asuncion, and Farallon de Pajaros.

Macroalgae is an important part of benthic habitats, as it is a major food source for many herbivorous fish. Macroalgae comprised a significant portion of the benthic substrate at both Maug and Asuncion (>12%), but is much less common (<4%) at Farallon de Pajaros. Although there was a significant difference in diversity, the most common species at all three islands were the brown algae *Lobophora* and the green algae *Halimeda* (Brainard et al. 2012).

Other important habitat types include sand and coralline algae. Sand cover was highly variable, making up the entire habitat in some sites and all together absent in others. Regardless, sand

cover was generally present in the highest percentages on the outer flanks and shelves on the southeast sides of the islands. Across all MARAMP surveys, crustose coralline algae cover averaged 8% of the substrate, and existed in highest concentrations on the south and west sides of the islands (Brainard et al. 2012).

Coral Reefs

Bubble coral in the Islands Unit. Photo: Paula Ayotte/NOAA

Coral reef habitats are the building blocks of marine coastal ecosystems. Found in the upper portions of the world's ocean where light is able to penetrate, coral reefs serve as habitat for a vast number of marine species. Although there is less coral diversity in the northern islands, the overall condition of the corals is better than that of the southern islands. The coral reef condition in the southern islands varies due to human induced stressors such as fishing, sedimentation, and nutrient loading (Starmer et al. 2005). By contrast, the isolation of the northern islands allows the coral reefs to remain in overall good condition (Birkeland, 1997). Three coral species, all listed as Threatened under the ESA, are known to occur in the waters of the CNMI: needle coral (*Seriatopora aculeate*), *Acropora globiceps*, and blunt coral (*Acropora retusa*), though their abundance, distribution, and health in the NISL is not well understood. In general, the major threat to corals is global climate change, in particular, temperature extremes leading to bleaching and increased susceptibility to disease, increased severity of ENSO events and storms, and ocean acidification. Another potential threat to Monument corals is the crown-of-thorns starfish (*Acanthaster planci*), known to be an avid predator of reef-building corals with a preference for branching and tabular corals such as *Acropora* species (Colgan 1987). Coral reef surveys have been conducted around Asuncion, Farallon de Pajaros, and Maug. Survey data for each island follows (DMTMMP 2015).

Maug

The mean cover of live corals around the island of Maug is approximately 25%, *Goniastrea* being the most common genera, followed by *Leptastrea*, *Montipora*, and *Pavona*. From the MARAMP surveys, there were 17 cases of coral disease and predation recorded at Maug, which translated to an overall mean prevalence of 0.02%. The four major coral diseases around Maug recorded were sub-acute tissue loss, skeletal growth anomalies, bleaching, and fungal infection (PIFSC 2010).

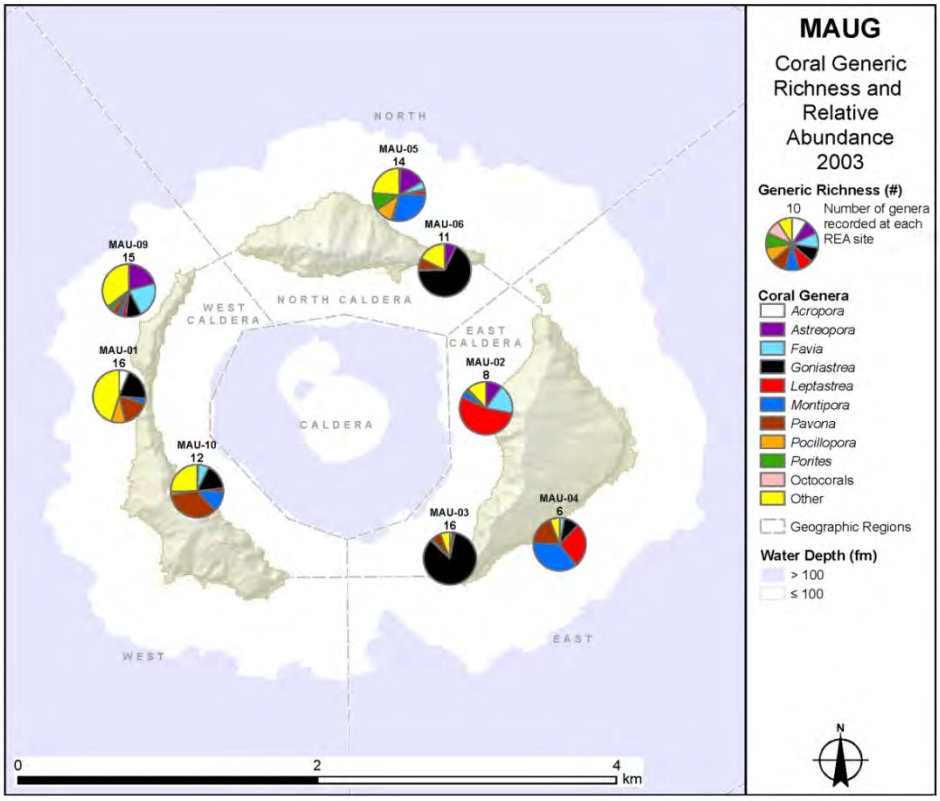


Figure C-7. Maug Coral Generic Richness and Relative Abundance 2003 (NOAA)

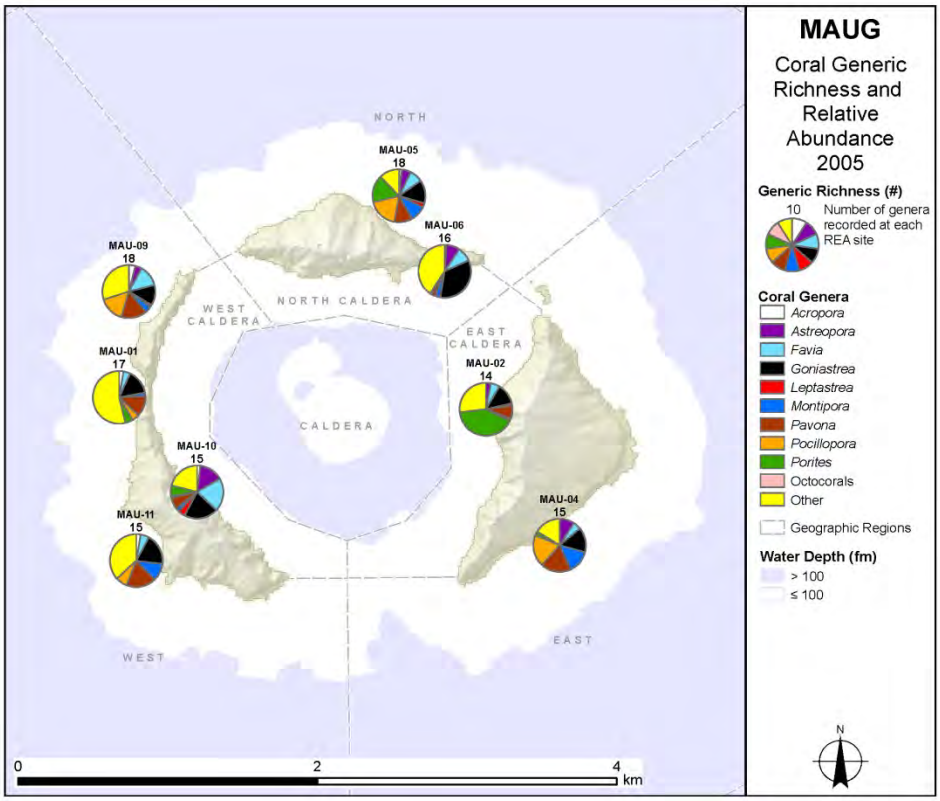


Figure C-8. Maug Coral Generic Richness and Relative Abundance 2005 (NOAA)

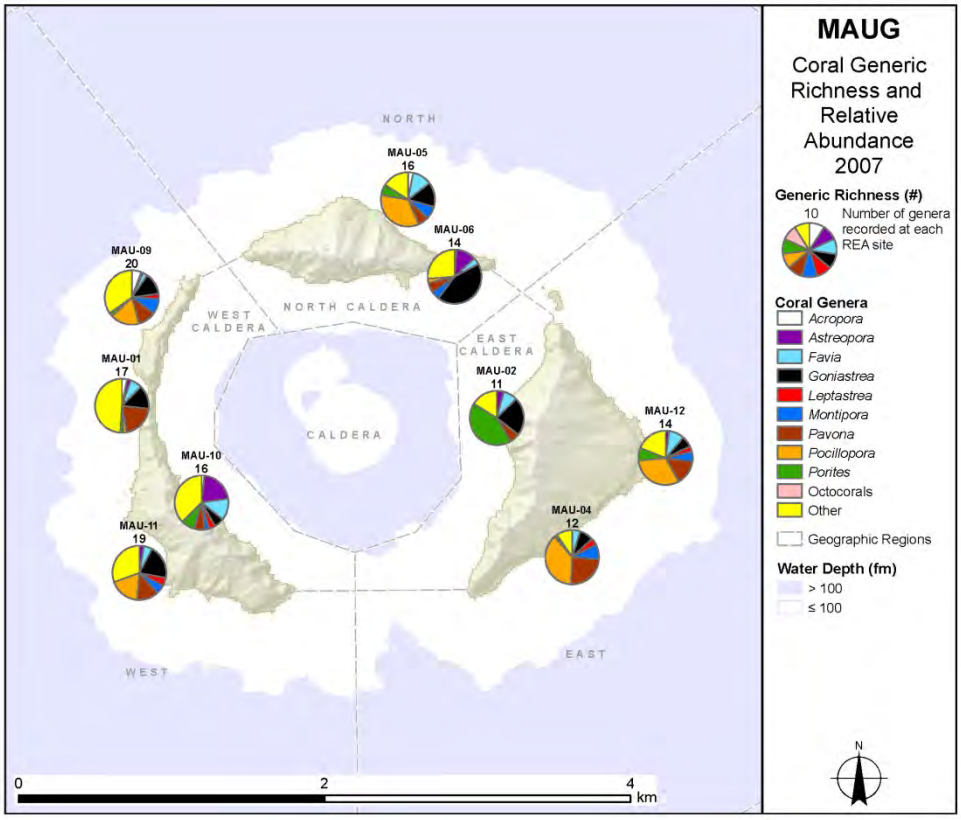


Figure C-9. Maug Coral Generic Richness and Relative Abundance 2005 (NOAA)

Farallon de Pajaros

At Farallon de Pajaros, coral cover was low during all three MARAMP surveys, with a mean coral cover average of 7%. *Pocillopora* and *Porites* were the most dominant coral recorded. The coral around Farallon de Pajaros was the only system in the Mariana Archipelago showing no signs of coral disease or predation (PIFSC 2010).

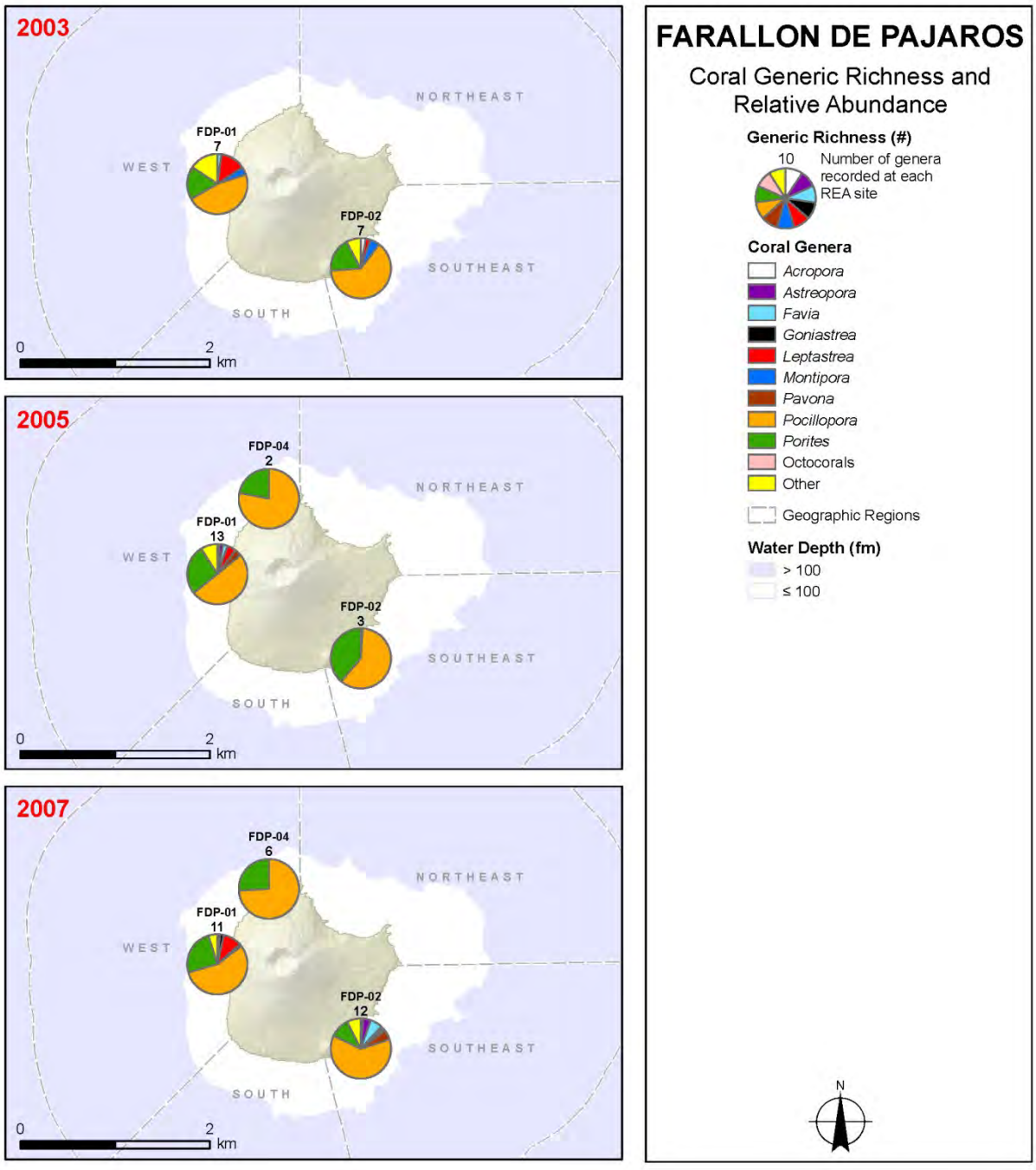


Figure C-10. Farallon de Pajaros Coral Generic Richness and Relative Abundance

Asuncion

The *Pavona* genera is an important component in the fauna around Asuncion, and accounts for >10% of the total number of the island's coral colonies. According to the most recent data, 10 cases of coral disease and predation are documented at Asuncion, translating to an overall mean prevalence of 0.02%. The major coral diseases occurring at Asuncion are fungal infection and skeletal growth anomalies (PIFSC 2010).

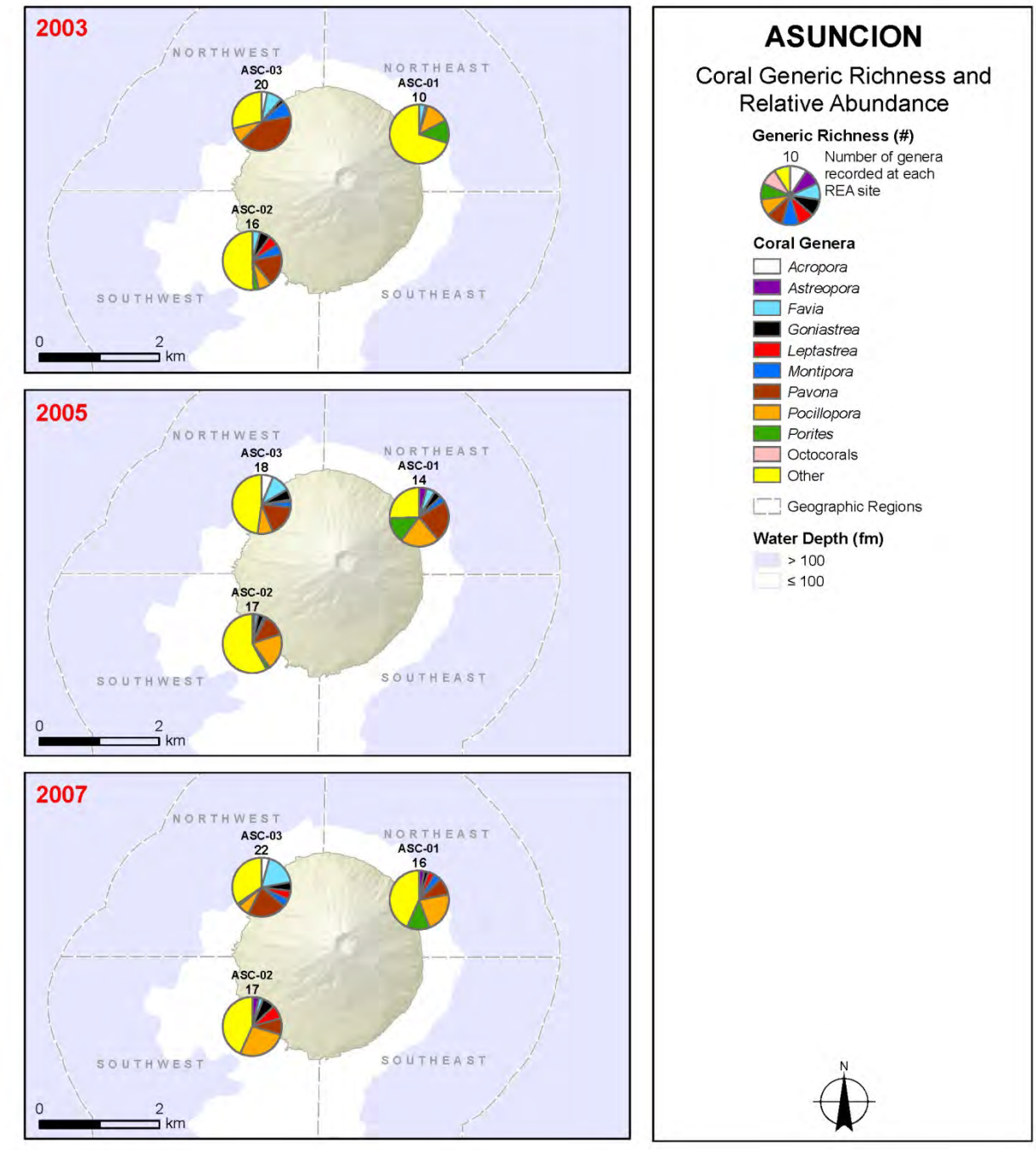


Figure C-11. Asuncion Coral Generic Richness and Relative Abundance 2003, 2005, and 2007 (NOAA)

In summary, the MARAMP surveys indicate that coral cover varies from island to island, as well as across different regions of each island. The average coral cover is considerably higher at Maug and Asuncion than the average coral cover at Farallon de Pajaros. Coral diversity is also significantly greater around Maug and Asuncion (29 genera) than around Farallon de Pajaros (17 genera) (Brainard et al. 2012).

A grey reef shark cruises amongst a school of fusilier at Supply Reef. Photo: Oliver Vetter/NOAA

Fish

Coral reefs and other benthic substrates are important habitats for a variety of fish species. The reef fish found around the Mariana Archipelago have been described as representative of the wider Indo-Pacific fauna. A total of 427 reef fish species have been documented in the northern islands of the Mariana Archipelago (Donaldson et al. 1994). The most common reef fish families in the northern islands are tangs, damsels, wrasses, and butterfly fish (Amesbury and Coleson 1996). Sharks, snappers, and jacks are abundant around Asuncion, Maug, and

Farallon de Pajaros Islands

Although species diversity is lower in the northern islands compared to the southern islands MARAMP surveys show that total fish biomass across all trophic levels[3] were three times greater in the northern islands than in the southern islands, and the biomass of large predators was found to be thirteen times greater (Brainard et al. 2012).

Giant clam decorates the reef at Maug.
Photo: NOAA

Typical of many isolated islands, the number and sizes of apex-predators per unit area is much higher in the Islands Unit than in the waters around the inhabited southern islands. Large numbers of apex predators indicate a naturally flourishing ecosystem at every trophic level in the food chain (Brainard et al. 2012).

Macroinvertebrates

Invertebrates such as clams, sea cucumbers, and sea urchins are an important group of reef-associated species. The invertebrate fauna across the Mariana Archipelago is quite diverse, with

[3] An organism's "trophic level" is their position in the food web. For example, an apex predator holds a trophic level at the top of the food chain (Brainard et al. 2012).

over 500 species of marine mollusks, 119 species of crustaceans, and 15 species of echinoderms (WPRFMC 1997). Although the majority of information on invertebrates in the archipelago comes from studies conducted around the southern islands, macroinvertebrate fauna around Maug has been found to be typical of the macroinvertebrate composite in Indo-Pacific waters. Macroinvertebrates exist in relatively low numbers across the Islands Unit, compared to their abundance around the other islands in the Mariana Archipelago. The giant clam is the lone exception, which thrives along the southern coast of Maug (Brainard et al. 2012).

Marine Mammals

Marine mammals are vertebrates who have adapted to life in the ocean. Many marine mammals are able to remain submerged for a long time, but must surface for air. In order to stay under water for long periods, they store extra oxygen in their muscles and blood than do land mammals. Marine mammals can direct their blood flow to feed only their vital organs in order to conserve oxygen and can slow their heart rate as a measure to use less oxygen on deep or extended dives. They are relatively large mammals characterized by streamlined bodies that glide easily through water.

All marine mammals are protected in U.S. waters by either the Endangered Species Act (ESA) and/or the Marine Mammal Protection Act (MMPA). The ESA-listed marine mammals that may occur in the Islands Unit are the blue whale, fin whale, sperm whale, humpback whale, and sei whale. The whale species that have been documented in the Mariana Archipelago include: short-finned pilot whales, pygmy killer whales, Bryde's whales, Cuvier's beaked whales, melon-headed whales, pygmy sperm whales and dwarf sperm whales. Other cetaceans that have been encountered in the archipelago include: spinner dolphins, bottlenose, pantropical spotted dolphins, striped dolphins, Risso's dolphins, and rough-toothed dolphins (Fulling et al. 2011, PIFSC 2013).

While all of these threats do not occur in the Islands Unit, these animals are threatened by marine debris, getting caught as by-catch in nets and on longlines, oil spills; collision with large vessels; entanglement in fishing gear; defense operations; pollution, including increasing amounts of plastic debris at sea, oil spills and dumping of industrial wastes into waterways and the sea, leading to bioaccumulation of toxic substances in body tissues; over-fishing of prey species, particularly commercial species such as anchovy; and direct hunts such as Striped dolphin drive hunts in Japan, the Caribbean and Sri Lanka and Risso's dolphins hunted for meat and oil in Indonesia, Japan, the Lesser Antilles, and the Solomon Islands. Drive fisheries that specifically target pilot whales still exist in Japan and the Lesser Antilles.

Sea Turtles

All sea turtle species are listed as either threatened or endangered under the Endangered Species Act. The Islands Unit is within the range of five turtle species. They are the leatherback, hawksbill, and loggerhead which are all listed as endangered; and the green turtle, and olive-ridley turtle, which are both listed as threatened.

Seabirds

Migratory bird species, including most seabirds, are protected by the Migratory Bird Treaty Act, which prohibits the take of protected species, their nests, and eggs. Three of the seabirds that occur in the Islands Unit are also listed under the ESA as threatened or endangered species (Hawaiian Petrel, Newell's Shearwater, and Short-tailed Albatross). Human-induced threats include hooking and drowning on commercial long-line gear, entanglement in derelict fishing gear, ingestion of plastic debris, and contamination from oil spills. Over-fishing impacts seabird populations, forcing them to fly further in search of food.

Of the seabird species that may be found in the Islands Unit of the Monument, some are considered residents while others are transient visitors. Those species that are considered residents include: black noddy, brown noddy, great frigatebird, white tern, white-tailed tropicbird, red-tailed tropicbird, wedge-tailed shearwater, sooty tern, masked booby, brown booby, and red-footed booby. Seabird species that are considered to be visitors include: Newell's shearwater, Leach's storm-petrel, the Matsudaira's storm-petrel, short-tailed shearwater, and Audubon's shearwater (DMTMMP 2015).

3. Site History

The Site includes the submerged lands adjacent to the islands of Maug, Farallon de Pajaros, and Asuncion, currently under federal authority. Under the proposed action, the submerged lands would to be conveyed to the Commonwealth of the Northern Mariana Islands (CNMI). Following the conveyance, CNMI's territorial sea would extend from the mean low water line at the three northern islands, seaward 3 nautical miles.

3.1 Current Uses of the Property and Adjacent Properties

3.1.1. Uninhabited Nature Preserves

In 1985, all three islands (plus Guguan) were established as nature preserves, through an amendment to the CNMI Constitution that stipulated that the "…islands of Maug, Uracas [Farallon de Pajaros], Asuncion, Guguan, and other islands specified by law shall be maintained as uninhabited places and used only for the preservation and protection of natural resources, including but not limited to bird, wildlife, and plant species."

3.1.2. Marine National Monument

On June 6, 2009 President George W. Bush issued Presidential Proclamation 8335 (Proclamation) establishing the Marianas Trench Marine National Monument under the authority of the Antiquities Act of 1906. The Monument was established for the purpose of protecting objects of interest such as the subduction system in the Trench, submerged volcanoes, hydrothermal vents, including the Champagne Vent and Sulfur Cauldron, coral reef ecosystems, and biologically diverse ecosystems where chemosynthetic and photosynthetic organisms exist side by side.

The Monument's Islands Unit includes the submerged lands (below the mean low water line) and waters surrounding the three northernmost Mariana Islands: Farallon de Pajaros, Maug, and Asuncion. The Unit is defined by an irregular boundary containing approximately 12,387 square nmi (Figure 1). The distances from each island to the nearest point on the Unit boundary are as follows: Asuncion Island - 20 nmi southerly; Maug Islands - 31 nmi southwesterly; Farallon de Pajaros - 34 nmi southwesterly.

The Volcanic Unit/Arc of Fire Refuge and the Trench Unit/Refuge consist of only the submerged lands and features therein (not the overlying water column) within their specified boundaries. The boundaries of the Monument's Volcanic Unit/Arc of Fire Refuge include the submerged lands extending one nautical mile circle drawn from the center of each of the 18 active submarine volcanoes and hydrothermal vents.

The boundary of the Trench Unit/Refuge extends from the northern limit of the Exclusive Economic Zone (EEZ) of the United States adjacent to the CNMI to the southern limit of the EEZ in the U.S. Territory of Guam.

Rare and unique geology, geochemistry, rare biological conditions, and pristine ecosystems provide an ideal location for interdisciplinary research. Because the area has a distinct position in the biogeography of the Pacific as a place where a high number of regional endemic and unusual species assemblages thrive, the Monument holds outstanding potential for globally significant social and scholarly contributions.

Monument management activities can foster a greater understanding of issues related to climate change, fisheries systems upon which international food markets rely, Pacific navigational and trade routes, geological processes and global events, and the interconnectivity between humans and the natural world. This national marine monument is part of a growing global network of marine protected areas (MPAs) linked by a shared concern for society's relationship with marine wildlife and the marine environment. The Monument is one of the largest MPAs in the world and is poised to host research pursuits and economic ventures that are consistent with marine conservation, fisheries activities, and cultural endeavors.

3.1.3. Fishing

Fishermen are held in high esteem in CNMI and Guam communities, and their catch frequently plays an important role in ceremonies and cultural festivities. The practice of sharing one's catch with family and friends is common throughout the Pacific; it maintains connections among family members and across the larger community, and links present day activities to deeply rooted cultural values. One member of the Mariana fishing community explains that visits to the waters around Maug, Asuncion, and Farallon de Pajaros, along with the fishing legacies that keep these places alive in the minds of people today "makes you feel like you are actually an islander." (Kotowicz and Richmond 2013).

Fishers have traveled to the waters around Maug, Asuncion, and Farallon de Pajaros to maintain the cultural tradition of fish sharing among the fishing crew, among the fishing crew member's family and friends, and among community members. The waters around the northern islands are not only considered by Archipelago residents to be abundant with resources, indicative of island life, and free; but intimately connected with generations of ancestors who also fished in these waters, shared their catch, and consumed the fish at important religious and ceremonial events. (Kotowicz and Richmond, 2013).

A 2012 survey of fishers who have fished in what now constitutes the Islands Unit shows that from 1979-2010, an average of 2.3 trips per year were made to this area for the purpose of fishing. Other trips were made for the purpose of research, charter, visitation/exploratory trips but included fishing for food. For example, almost all (98%) of the reported trips included fishing, regardless of the stated primary purpose of the trip (129 total trips from 1939 to 2010). Recent research also found that the formal and informal exchange of marine resources from the Islands Unit provides a food source for residents, maintains an important connection between residents and this culturally significant place, and allows for gift giving, trade, and monetary transactions independent of commercial markets. The non-market transactions between fishers and other members of their community make it financially feasible for fishing to occur in the Islands Unit through monetary cost recovery and resource sharing. (Kotowicz and Richmond 2013).

3.1.4. Ecotourism

Ecotourism, also known as nature-based tourism, is defined as "responsible travel to natural areas that conserves the environment and improves the well-being of local people." (TIES 1990) This approach to tourism has gained momentum for its potential to co-exist with the natural and socio-cultural environment of a destination. All participants in a 2010 Visitor Exit Survey ranked "nature and scenic activities" in their top ten reasons for traveling to the CNMI (Northern Mariana Islands Tourism Master Plan 2012). This statistic has encouraged the Mariana Visitors Authority to develop their islands' niche ecotourism market with a focus on historic sites, snorkeling and scuba excursions, bird watching tours, and tourism that can support the production of aquaculture and agriculture (DMTMMP 2015).

3.2 Past Use(s)/Ownership

The Chamorro are commonly believed to have come from Southeast Asia 3,500 years ago. They are most closely related to other Austronesian-speaking peoples to the west in the Philippines and Taiwan, as well as the Carolines to the south. They were expert seafarers and skilled craftspeople familiar with intricate weaving and detailed pottery-making (Office of Insular Affairs, http://www.doi.gov/oia/islands/cnmi.cfm). Archeologic accounts establish that early Chamorro were in contact with one another across the archipelago and engaged in commerce with far reaching islands across Oceania. All of the Mariana Islanders share cultural and linguistic characteristics and archeologic findings show continuity in ceramic production on the different islands until the Latte Period (900-1700 CE). Similarity in early ceramic styles, decoration, and technique are indicative of areas with "strong inter-community and inter-island ties." (Rainbird 2004).

Ceramic remnants suggest that people on Agrihan, a northern island, were in contact with people on Guam, the southernmost island. Clay and ceramic pots were moving between settlements, as were production techniques. Burial practices, rock art, archeological remains, and evidence of resource propagation, in addition to the Chamorro villages that populated Guam, Tinian, and Rota prior to Spanish arrival, indicate that islands across the Mariana Archipelago were used for various reasons. Archeological research indicates that caves on Asuncion may have been used as mortuary areas (Russell 1998).

It is likely that support from the larger, resource-rich islands to the south was needed to sustain intermittent settlements on the remote northern islands of Maug, Asuncion, and Farallon de Pajaros. All three islands are seabird nesting areas and people harvested, salted, and distributed seabirds from the northern islands to people living on the other islands (Laguna et al. 2012; Clark et al. 2010; Fitzpatrick et al. 2013).

Encounters between the Chamorro people and other islanders across Oceania, in particular the people of the Philippines, Yap, Palau, the Caroline Islands, and Southeast Asia precede interaction with the Spanish by many centuries. The first documented interaction between Chamorro and Spaniards took place in the 16th century. Ferdinand Magellan, a Portuguese explorer employed by the King of Spain, arrived in the Mariana Islands in 1521, and Miguel Lopez de Legaspi claimed the islands for Spain in 1565. Of note, Magellan visited the island of

Maug during the 16th century, finding approximately 20 residents and limited fresh water and sugarcane. A number of European crew members abandoned ship at this time and one, Gonzalo de Vigo, lived for several years among the Chamorro residents (Levesque 1992).

Many ships anchored in Mariana waters in the years following Magellan's arrival, which spurred the iron trade between the Chamorro population and foreign sailors in the economic system known as "hierro commerce." Iron was fashioned into tools for canoe production and fishing equipment. There are 17th century reports about toolmakers on Rota describing how Chamorro people were able to sharpen metal pieces using cobblestones, and shape iron nails into fish hooks (Quimby 2011).

Amicable relations shifted soon after the Spanish mission was established on Guam. The Mariana Islands became a colony of Spain in 1668 at which time the islands were named after Mariana of Austria, the widow of Spain's King Phillip IV (Rogers and Ballendorf 1989).

Guam became the Spanish colony's main outpost in the Mariana Archipelago. Residents from across the Archipelago were relocated by the colonial administration off their home islands to the island of Guam in order for the government to manage the previously dispersed population. Although Rota was never completely depopulated, the rest of the Northern Mariana Islands were scarcely inhabited from 1740-1815 (DMTMMP 2015).

Movement between Guam and other islands within the archipelago allowed Chamorro people to slowly repopulate the Northern Mariana Islands, and the Spanish relocation efforts that moved the Chamorro population to Guam eventually eased. Diaz and Kauanui explain that today, "Chamorros of the Mariana Islands refer to themselves as Taotao Tano (people of the land) while residents of the Caroline atolls refer to themselves as *Re Metau* (people of the sea)… Among the *Re Metau* there is a distinction between those who have "remained" [in the Caroline Islands] … and the *Refalawasch*, who have settled the islands of the Northern Marianas since the 18th and 19th centuries." (Diaz and Kauanui 2001).

The Mariana Islands have been administered by four different countries since the 17th century: Spain, as described in the previous section (1668-1898), Germany (1899-1914), Japan (in the CNMI from 1914-1945, in Guam from 1941-1944), and United States (in the CNMI from 1945-present; in Guam from 1898-1941, 1944-present). Guam was ceded to the U.S. in 1898 as a result of the Spanish-American War, and in 1899 Germany purchased the Mariana Islands north of Guam. Following the sale of the Northern Marianas by Spain to the German Empire in 1899, the islands were administered as part of German New Guinea. This divided governance in the archipelago: Germany governed what is now the CNMI (all islands north of Guam) and the U.S. governed Guam (DMTMMP 2015).

By the late 1930s, Japan began increasing their military capacity and infrastructure in the Northern Mariana Islands. Japanese airplanes bombed the then U.S. Territory of Guam on December 8, 1941. This attack, along with simultaneous attacks on Pearl Harbor in Hawaiʻi and a U.S. base in the Philippines brought the United States into WWII. On December 10, 1941, the U.S. surrendered the island of Guam to Japan. From 1941-1944, the U.S. military fought against

Germany and Italy as an ally of England until it could reorient its focus from a defensive to an offensive posture in the Pacific (Farrell 1991).

The United States attacked Japanese forces on Saipan and Tinian in June of 1944 and then invaded Guam on July 21, 1944. The U.S. officially occupied Tinian beginning on August 1, 1944 and Guam on August 10, 1944. Rota and the islands north of Saipan were governed by Japan until September 2, 1945 when the U.S. assumed control (Farrell 1991).

The U.S. Naval Military Government administered the Northern Mariana Islands until 1947. From 1947-1975, the Northern Mariana Islands were part of the United Nations' Trust Territory of the Pacific Islands and were administered by the United States under a United Nations mandate. The Trusteeship Agreement is a legal instrument that is intended to assist the Trust Territories, all of which were former colonies, in a movement toward self-governance. In 1975, the people of the Northern Mariana Islands and the United States entered a political Covenant that established a Commonwealth under the sovereignty of the United States. The Covenant was put to vote in a plebiscite on June 17, 1975 and approved by the U.S. House of Representatives through a joint resolution July 21, 1975 (Horey 2003). On March 6, 1977 CNMI voters ratified the Commonwealth Constitution which took effect on January 9, 1978.

U.S. military presence in the Mariana Archipelago persisted after WWII, continuing through the Vietnam War and Cold War operations. U.S. Naval Base Guam and the U.S. Andersen Air Force Base merged on October 1, 2009 to create Joint Region Marianas. Andersen Air Force Base on Guam is considered one of two critical bases in the Asia Pacific region (the other location is Diego Garcia in the Indian Ocean).

The Department of Defense (DoD) will continue to conduct exercises in the region and has committed to adopt appropriate measures to minimize impacts on natural resources within the Monument. The 2009 Mariana Islands Range Environmental Impact Statement addresses ongoing and proposed military training activities within the Mariana Islands Range Complex, which includes portions of the Monument. A description of military training activities and potential effects are addressed in these documents, and may be viewed on-line at http://mitt-eis.com.

3.2.1 Japanese Occupation

During the 1890s, Japanese businesses engaged in resource extraction including guano mining and copra-making operations at Asuncion and Farallon de Pajaros (Russell 1998). In 1903, Asuncion and Farallon de Pajaros were leased to another Japanese company to hunt birds for their feathers as an export to Paris to meet the fashion demands for feather hats, garments, and accessories. At the turn of the 20th century, European millinery trade drastically increased harvest rates of seabirds on these and other Pacific Islands. Under the German administration, islands were leased to a German company for seabird plumage in 1909 (Spennemann 1999a). Primary targets included tropicbirds, terns, and brown boobies. When the lease was terminated after three years, bird populations had been reduced to levels such that further exploitation was deemed uneconomical (Spennemann 1999b).

On October 14, 1914, Saipan was seized from German governance by Japan, marking the end of the German period in what is now the CNMI. At the onset of World War I (WWI), Japan assumed control of government in 1914 and the Northern Mariana Islands became one of six Japanese naval districts of Micronesia. Between World Wars I and II, a Japanese military vessel sailed along the island chain from Saipan to Asuncion moving people and supplies between islands. Oral histories have confirmed photographic evidence that Okinawan employees of the Japanese military processed fish while living on Maug (Kotowicz and Gionfriddo 2014).

3.2.2 WWII

The CNMI was a major battlefield during WWII. Most all of the fighting was to the south involving the largest islands of Saipan, Tinian, and Rota, where war debris and unexploded ordnance is still common in the nearshore waters. Ordnance has also been found in other waters of the CNMI. The effect of chemical leeching of ordnance including explosive chemicals and metal casings (e.g. copper, lead, tin) upon marine life have not been evaluated (Brainard et al. 2005).

3.2.3 Nature Preserves

All three islands (plus Guguan) were established as nature preserves, through an amendment to the CNMI Constitution that stipulated that the "…islands of Maug, Uracas [Farallon de Pajaros], Asuncion, Guguan, and other islands specified by law shall be maintained as uninhabited places and used only for the preservation and protection of natural resources, including but not limited to bird, wildlife, and plant species."

3.2.4 Storm Patterns

For the Pacific, the Intergovernmental Panel on Climate Change (IPCC) predicts changes in extreme weather events including the possibility of increased droughts and floods, shifts in tropical cyclone tracks associated with El Niño, more intense rainfall events, and a possible increase in tropical cyclone peak wind intensity (Stocker et al. 2013). These rates are likely to increase with continued increases in temperature. Combined with higher sea levels, could result in a higher storm surge with the potential for reef and coastline damage. The intensity of regional weather patterns is predicted to escalate, and the number of storm events is predicted to increase.

3.2.5 Sea Level Rise

Average global sea level has risen ~7 inches since 1901 and is predicted to rise 10-32 inches by 2100, depending on which regional climate change projection is analyzed (Stocker et al. 2013). These estimates do not take into account variation in the rates of melting for ice sheets and glaciers, which recent studies indicate could dramatically accelerate sea level rise (Stocker et al. 2013). Additionally, evidence suggests the rate of sea level rise varies regionally, primarily due to variations in plate-tectonic activity. In 2007, the IPCC predicted a rate of sea level rise of 1.2 to 2 mm per year in the equatorial Pacific. It should be noted that observed rates of sea level rise have continually outpaced the IPCC's previous worst case scenario models (Stocker et al. 2013).

With rising sea levels, inundation of low-lying island areas, coastal erosion, and salt water intrusion into subsurface freshwater aquifers are of concern for many Pacific islands. High seasonal and storm waves will travel further inland as sea level increases, creating new wetlands and causing changes to existing waterways such as streams and estuaries, surface drainage, and increasing the likelihood for flooding if high tide coincides with heavy rainfall. Coastal erosion may increase the introduction of sediments into the marine environment, decreasing overall water quality. The degree of vulnerability of high islands like Asuncion, Maug, and Farallon de Pajaros is uncertain, because these islands are made-up of primarily volcanic, rocky slopes and a few, limited sandy shorelines. Nonetheless, the area of the submerged lands will shift inland with sea level rise (DMTMMP2015).

3.2.6 Volcanic Activity

Volcanic eruptions are not frequent but appear to have a great impact on the coral communities (Eldredge and Kropp 1985).

The three islands are part of the active Mariana Arc created by the subduction of the Pacific Plate under the Philippine Plate. Farallon de Pajaros and Asuncion have been active in recorded history. Due to frequent eruptions in previous centuries, Farallon de Pajaros was known as the "Lighthouse of the Pacific," however, it has been quiet since 1967 (Siebert and Simkin 2002).

Asuncion's most recent confirmed eruption in the 1920s was minor, preceded by a major eruption in 1906. White gas plumes occasionally emerge from the top and the slopes of Asuncion. Low-level volcanic activity on Asuncion was documented by volcanologists who visited the area in 1992 and observed active fumaroles (volcanic gas vents), and also by USGS over flights in 1995 that observed steaming from the volcano summit. Several other unverified eruptions have been reported. Asuncion and Maug are connected by a deep, underwater plateau (Sigurdsson et al. 2000).

In 2003, NOAA's Coral Reef Ecosystem Division (CRED) observed a hydrothermal vent system within the caldera at Maug. Samples taken at the site indicated pH values were much more acidic than the surrounding waters and the water temperature was higher. Based on the calculated states of calcite and aragonite saturation of undiluted vent water, the conditions were determined to be highly corrosive to calcifying organisms. No calcium-carbonate producing organisms were observed within the vent system. However, only 15 meters away from the site, a CRED's rapid ecological assessment team found coral cover of 67% in 2007; approaching nearly 100% coral cover in one area (Brainard et al. 2012).

3.2.7 Uninhabited Islands

Asuncion, Farallon de Pajaros, and Maug are currently unpopulated. As on other islands in the CNMI, Spain in 1695 forced any inhabitants to relocate to Guam (Rogers 1995), there has been no permanent inhabitation of Maug and Asuncion since that time. Farallon de Pajaros has probably always been permanently uninhabited, because of its inhospitable terrain and frequent volcanic activity. In 1909, while under rule by Germany, Asuncion, Farallon de Pajaros, Maug, Agrihan, Guguan, Sarigan, and Farallon de Medinilla were leased to a trading association, the

Pagan Gesellschaft, for exploitation of bird plumage for a period of 3 years(Spennemann 1999). During this time, Japanese bird catchers employed on these islands may have established temporary residences, and other fishing or hunting parties may have also periodically resided on Maug and Farallon de Pajaros. Since 1978, the CNMI Constitution has prohibited inhabitation of Asuncion (CNMI Constitution).

3.2.8 Shipwrecks

Nineteen vessels, ranging in size from commercial steamers to canoes, are recorded to have been lost in the CNMI between 1600 and 1940 (Carrell 1991). Between 1940 and 1946, numerous vessels are recorded to have been sunk in the vicinity of the Mariana Islands.

On December 2013 a 45-50 foot Japan registered sailing trimaran grounded on an island inside the caldera at Maug. The 3 Japanese nationals on board were rescued and picked up by the Japanese equivalent of the US Coast Guard (USCG), but the damaged vessel remained aground inside the caldera. The owner of the vessel reported 250 gallons of diesel that the USCG considered quickly dissipated. The USCG has no on-going issues regarding pollutants. However, the vessel was left where it was grounded and allowed to break up.

NOAA performed informal assessment (inclement weather prohibited quantitated surveys) of the shipwreck site on the East Island at Maug. They found very little underwater debris. Except for a few metallic items, such as a scuba tank, an anchor, and other items that could be part of an engine or generator, most of the debris field (ship's hull, wooden cabinetry, console, plastic wiring, mast, sail, etc.) are all widely scattered onshore, extending for over 200 m (Vargas-Angel 2014 Pers. Comm.; Quitugua 2015),

This trimaran grounded on an island inside the caldera at Maug Island, the crew was rescued, and the ship was abandonded.

The abandoned trimaran eventually broke apart, leaving debris to wash on shore and sink to the ocean floor.

4 Review of Regulatory Information

4.1 Federal Environmental Records

No federal records we found pertaining to NISL. Databases referenced include: U. S. Environmental Protection Agency (EPA)'s National Priorities List (NPL), delisted NPL, EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS, commonly known as 'superfund'), CERCLIS NFRAP (no further remedial action planned), EPA's Resource Conservation and Recovery Act Corrective Action Program (RCRA CORRACTS/TSD (treated, stored, or disposed of hazardous waste sites)), RCRA Non-CORRACTS/TSD, RCRA generators, institutional/engineering control registries, and National Response Center's (NRC's) Emergency Response Notification System (ERNS).

4.2 State and Local Environmental Records

4.2.1 NPL and CERCLIS

There are no superfund sites on or near the Property.

4.2.2 SWLF/LF

There are 3 Municipal Solid Waste Landfills (MSWs) sites in the Northern Mariana Islands according to the EPA's List of Municipal Solid Waste Landfills (EPA 1995). The three MSWs are located on Rota, Saipan, and Tinian; these MSWs are not located on or adjacent to the subject property.

4.2.3 UST/LUST

There are 72 active underground storage tanks in the CNMI according to the EPA's UST database as of December 17, 2014 (http://www.epa.gov/oust/). However, of these reported, it is highly unlikely that any are located on the three northern most uninhabited islands subject to this report. To the best of our knowledge, no USTs exist on or adjacent to the Property.

4.2.4 Institutional/Engineering Control Registries

In September, 2014, CNMI conducted an assessment of water quality (Bearden et al. 2014). Regarding the northern most uninhabited islands of CNMI, the report states: "The uninhabited northern islands, due to their lack of development, or when inhabited having less-developed watersheds with minimal anthropogenic impacts, it is unlikely that contaminants or other pollutants pose a threat to coastal waters. Their remoteness, lack of accessibility, and the recent listing of the three northern most islands as a US National Monument, make them fully supportive of all coastal water use designations based on professional judgment." (Bearden et al. 2014)

4.2.5 Voluntary Cleanup

CNMI is not a party to any EPA voluntary cleanup program memorandum of agreement.

4.2.6 Brownfield Site

The CNMI contains at least 68 brownfields (EPA 2014). Brownfields in the CNMI generally include former garment factories, dry cleaners, and heavy equipment facilities. Additional sites may include areas with historic military operations, primarily containing unexploded ordinance and fuel storage facilities (EPA 2009). There are no records of brownfield sites on the Property.

4.2.7 TRI

According to the Toxic Release Inventory (TRI) Program, there is no record of a TRI Facility on or near the Property (http://www2.epa.gov/toxics-release-inventory-tri-program).

5 Environmental Condition Overview

5.1 Chemicals / Hazardous Substances

5.1.1 Ship Movement / Shipwrecks

The level of at sea dumping by transiting vessels is unknown, although this practice is regulated by international agreements such as the International Convention for the Prevention of Pollution from Ships (MARPOL) and U.S. policies, such as the Ocean Dumping Act.

Only one shipwreck, in which ocurred in 2013, was recorded on the Property. The 2013 shipwreck spilled 250 gallons of diesel that quickly dispersed. However, shipwrecks bring not only the fuels to power them, but all cargo and the materials that made the ship, along with the physical damage caused by debris. So while it is impossible to estimate the potential for additional shipwrecks, they are likely to be a few, each one would need to be evaluated individually to assess adverse impacts to the Property.

5.1.2 Marine Debris

Towed-diver benthic surveys of forereef habitats around Maug, Asuncion, and Farallon de Pajaros have identified a limited amount of derelict fishing gear such as old fishing lines, nets, and other man-made objects. Results of the surveys are available in the PIFSC Coral Reef Ecosystem Monitoring Report of the Mariana Archipelago: 2003-2007 (http://www.pifsc.noaa.gov/cred/coral_reef_ecosystem_monitoring_reports.php#sp-12-01).

5.1.3 Waste Disposal

Garbage could have been disposed of in the nearshore environment, but no dumps are known to be on the Property. Camps set up during the Japanese occupation appeared to have been basic camps with no large power supplies. It is unlikely they served as major sources of long-lasting chemical contamination.

5.1.4 Volcanic Activity

Volcanic eruptions are not frequent, but appear to have a great impact on the coral communities (Eldredge and Kropp 1985).

5.1.5 Asbestos-Containing Material (ACM)

No ACM is known to be on the Property, but it is possible marine debris or containing ACM could be carried to the Property by ocean currents.

5.1.6 PCB Equipment

No PCBs are known to be present or ever used on the Property. New research suggests that plastic marine debris may prove a common vector for transporting hydrophobic contaminants

such as PBDEs (Polybrominated diphenyl ethers) and PCBs around the ocean (Rochman et al. 2014). But none have been shown to be transported to the Property.

5.1.7 Metals

Since the 17th century inhabitants of the Marianas have used iron for fishing and boating. Fishing can contribute to environmental iron and lead deposition through the loss of fishing sinkers and jigs. The probability of possible contamination due to fishing equipment is low in light of the above information regarding how few fishermen visit the waters above the Property. More recently lead and mercury have been common components in batteries. Doubtless batteries have been taken to the islands associated with the Property and could have been disposed of onto the Property. However, no dumps or deposits of iron or batteries have been found on the Property.

5.1.8 Petroleum

No petroleum has been identified on the Property. It is without doubt that passing or visiting ships have carried petroleum to the vicinity. The only reported spill was from the 2013 shipwreck at Maug where 250 gallons of diesel were spilled but the US Coast Guard considered has quickly dissipated (Quitugua 2015).

5.1.9 Munitions and Explosives of Concern (MEC)

While the southern portion of the CNMI and Guam were major battlefields in WWII, the northern part of the CNMI were not. Ships and planes most likely transited near the Property and could have dropped stray ordnance into the Property. As with most Pacific islands, marine debris is often present on the islands' beaches and entangled in the reefs. However, none has been reportedly found on the Property.

Another possible source of explosives that could have been used or deposited in the Property is by transient fishermen using explosives to fish. However, none has been found on the Property.

6 Findings and Conclusions

The U.S. Fish and Wildlife Service has prepared this EBS within the scope and limitations of ASTM Designation D6008-96 (2005), Standard Practice for Conducting Environmental Baseline Surveys. Finding of this EBS are based on interviews and existing environmental information including site records, Federal, State, and Local database and file information, related to the storage, release, treatment, or disposal of hazardous substances or petroleum products or derivatives on the subject property.

Based on the data reviewed for this EBS, we conclude that the NISL should be categorized as an ECP Category Type 3 property, which, in accordance with ASTM Designation D5746-98 (2002), Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities, is defined as an area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action.

This classification was selected based on the fact that the area is incredibly remote and uninhabited with no recorded evidence of direct contamination with the exception of a recent ship wreck which was found to have resulted in petroleum contamination at concentrations that did not require removal or remedial action according to the USGS. In addition, it is possible that the migration of marine debris may contribute to the environmental condition of the property; it is unknown the quantity of marine debris that has ended up in the NISL by way of historical military operations, private boating excursions, or indirectly by ocean currents.

Interviewees included: Laura Beauregard, Wildlife Refuge Planner assigned to the Hawaiian and Pacific Islands Refuges and Monuments Complex and Charlie Quitugua Zone Law Enforcement Officer assigned to the Hawaiian and Pacific Islands Refuges and Monuments Complex, who responded to the 2015 grounding of a ship inside the caldera of Maug.

7 Deviations

This EBS was prepared to review certain elements of the environmental condition of the subject property related to the storage, release, treatment, or disposal of hazardous substances or petroleum products. It documents efforts to determine or discover the presence or likely presence of a release or threatened release of these materials. Due to the remote and difficult access to the Property, project activities were limited to researching literature and reports of the areas. This report relied heavily on the information gathered in the Draft Marianas Trench Marine National Monument Management Plan.

8 Professional Qualifications

Lee Ann Woodward has a BS in Biology and an MS and PhD in Ecology with specialization in Environmental Toxicology. She did graduate research at Oak Ridge National Laboratory and Savannah River Ecology Laboratory. As an Associate at Clement Associates, ICF International, she specialized in ecological risk assessments for clients that included the EPA.

Dr. Woodward has been with the Service since 1997. In her position as Resource Contaminants Specialist, she is in charge of contaminants issues and oil response for the Hawaiian and Pacific Islands National Wildlife Refuges and Monuments. Duties include the assessment of contaminant effects on fish and wildlife and their habitats. Plan, conduct, and analyze field investigations and risk assessments. Develop diagnostics and design remedial actions for invasive species and contaminant-related natural resource issues. Review environmental contaminant investigations, remedial activities, and research proposals of various federal, state, and private agencies. Dr. Woodward is also an Adjunct professor at the University of Hawaii-Manoa.

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APPENDIX D. NATIONAL HISTORIC PRESERVATION ACT COMPLIANCE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
911 NE 11th Avenue
Portland, Oregon 97232-4181

In Reply Refer To:
FWS/R1/NWRS

MAY 02 2016

Mr. Roy Sablan, Historic Preservation Officer
Commonwealth of the Northern Mariana Islands
Department of Community and Cultural Affairs
Airport Road
Saipan, MP 96950

Dear Mr. Sablan:

The U.S. Fish and Wildlife Service (Service), in cooperation with the Commonwealth of the Northern Mariana Islands Government (CNMI) and the National Oceanic and Atmospheric Administration, developed the enclosed Draft Environmental Assessment (EA) analyzing the proposed Marianas Trench Marine National Monument Northern Islands Submerged Lands Transfer to CNMI. The Service is responsible for completing the EA in compliance with the National Environmental Policy Act. The proposed action would result in the U.S. Department of the Interior conveying specific submerged lands to CNMI via a patent with a retained easement.

The areas of potential effect in the Draft EA are the submerged lands adjacent to the Northern Mariana Islands of Farallon de Pajaros (Uracas), Maug, and Asuncion, and include lands permanently or periodically covered by tidal waters up to the mean low water line, and extending three miles seaward from the mean high tide line of each of the islands (see maps in Appendix A of the Draft EA). We evaluated the potential effects of our proposal to historic properties within the areas, and request your opinion on our following determination by June 6, 2016.

> Pursuant to CNMI's Historic Preservation Act, and Section 106 of the National Historic Preservation Act, we have determined that the proposed transfer is an undertaking that has no potential to cause effects on historic properties.

Your input is important to completing our analysis in the final EA. If you have any questions regarding our historic properties determination, please contact Anan Raymond, Regional Archaeologist, at phone number (503) 625-4377; or through email at *anan_raymond@fws.gov*. Thank you for your assistance with the submerged lands transfer to CNMI.

Sincerely,

Regional Realty Officer

Enclosure

U.S. Department of the Interior
U.S. Fish and Wildlife Service
Pacific Region
911 NE 11th Avenue
Portland, Oregon 97232

http://www.fws.gov

May 2016

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

Coral Reef
Jean Kenyon/USFWS